

April 14, 2014
File No. 18605.00



249 Vanderbilt Ave.
Norwood
Massachusetts
02062
781-278-3700
FAX 781-278-5701
<http://www.gza.com>

Mr. Daniel Keefe
United States Environmental Protection Agency – Region I
5 Post Office Square
Suite 100
Mailcode: OSRR07-03
Boston, MA 02109

RE: 2013 Annual Monitoring Report
Norwood PCB Superfund Site
Norwood, Massachusetts

Dear Mr. Keefe:

GZA GeoEnvironmental, Inc. (GZA) has prepared this report to fulfill the requirements of the Operation and Maintenance Plan and the Environmental Monitoring Work Plan for the above referenced Site, both published by GZA in 2004 and updated in 2010 to reflect recent redevelopment of the Site. This report describes the results of scheduled operation, maintenance and sampling activities that have been performed by GZA in the calendar year 2013 on behalf of the Norwood PCB Superfund Site Remediation Trust.

Please contact the undersigned with any questions or if you require additional information.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

A handwritten signature in blue ink, appearing to read "R. Parkman".

Russell B. Parkman, P.E.
Senior Project Manager

A handwritten signature in blue ink, appearing to read "P. Sheehan".

Patrick F. Sheehan, P.E.
Consultant/Reviewer

A handwritten signature in blue ink, appearing to read "A.J. Ricciardelli".

Albert J. Ricciardelli, P.E., LSP
Senior Principal

cc: Dave Buckley – MADEP
Jonathan Ettinger, Esq. – Foley Hoag
Howard Weir, Esq.

Attachment: 2013 Annual Monitoring Report

**2013 ANNUAL MONITORING REPORT
NORWOOD PCB SUPERFUND SITE
NORWOOD, MASSACHUSETTS**

PREPARED ON BEHALF OF:

The Norwood PCB Superfund Site Remediation Trust
Norwood, Massachusetts

PREPARED BY:

GZA GeoEnvironmental, Inc.
Norwood, Massachusetts

April 2014
File No. 18605.00



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1.00 INTRODUCTION

This 2013 Annual Monitoring Report (Report) has been prepared for the Norwood PCB Superfund Site in Norwood, Massachusetts (the Site). This Report describes the scheduled operation, maintenance and sampling activities that were performed by GZA GeoEnvironmental, Inc. (GZA) during the 2013 calendar year on behalf of the Norwood PCB Superfund Site Remediation Trust to assess the protectiveness and performance of the Settling Defendants' Remedial Action (RA) performed at the Norwood PCB Superfund Site (the "Superfund Site").

This report has been prepared in accordance with the United States Environmental Protection Agency (EPA) approved Environmental Monitoring Work Plan (EMP) and Operation and Maintenance Plan (O&MP) prepared for the Site. These plans were prepared in 2004 and updated in 2010 to reflect recent development of the Site.

1.10 SITE LOCATION AND DESCRIPTION

The Norwood PCB Superfund Site, as defined by the 1989 Record of Decision (ROD) which was subsequently amended on May 17, 1996, encompasses approximately 26 acres in an industrial/commercial area in Norwood, Massachusetts. The Superfund Site consists of several parcels of land including the Hurley property¹, residential properties to the north of the Hurley property, several properties on Kerry Place (excluding Lots 12 and 13), and adjacent parking areas and fields. The portion of the Superfund Site that was the subject of the Settling Defendants Remedial Action (the "Site") extends north to Meadow Brook, east to U.S. Route 1 and the Dean Street Access Road, south to Dean Street, and west to Pellana Road, and includes the portion of Meadow Brook located between the Hurley property and the Dean Street culvert. A Locus Plan is provided in Figure 1.

The Hurley property (referred to as the "Property" or "on-Property") comprises approximately 8.6 acres of the Norwood PCB Superfund Site. The Property, formerly occupied by the Grant Gear building and adjacent paved parking areas, was used from the 1940's through 1979 to manufacture electronic equipment and from 1979 to 1994 to manufacture gears.

In 2011, the Hurley Property was conveyed to MonkeySports Capital MA, LLC by deed recorded at the Norfolk County Registry of Deeds on May 20, 2011, Book 28813, Page 469.

Investigations performed on Site between 1983 and 1996 indicated elevated levels of polychlorinated biphenyls (PCBs) in several media, as identified below:

- Surficial soils on-Property;

¹ The subject property, formerly owned by John Hurley, has been sold since work began at the Site; however, for consistency with previously submitted reports, we will continue to refer to the subject Property as the Hurley property.



- Subsurface soils on-Property;
- Sediments in the adjacent Meadow Brook; and,
- Portions of the Grant Gear building.

In addition, the investigations identified a localized area on the west side of the Property contaminated with 1,2,4-trichlorobenzene (1,2,4-TCB) in the saturated zone soil. The identified PCB and 1,2,4-TCB contamination were addressed under the Remedial Action (RA) performed by GZA.

1.20 REMEDIAL ACTION

The amended ROD for the Superfund Site (dated May 17, 1996) required performance of the following activities to mitigate risk associated with the identified contamination in soil, sediment and building materials:

- Demolition of the Grant Gear building with on-Site and off-Site disposal and recycling of building materials (completed January 1997).
- Removal of certain contaminated sediments from Meadow Brook and the Dean Street culvert, with excavated sediments consolidated on-Property (completed August 1997).
- Excavation and on-Property consolidation of certain contaminated soils from the Site (completed December 1997).
- Capping and covering of certain on-Property areas (completed mid 1998). An asphalt Cap was placed over certain areas containing PCB-impacted soils and building materials, and a Cover was placed over areas excavated during the soil/brook remediation phase of the RA.
- Closure of an on-Property underground storage tank (UST). A second UST identified during the RA was also addressed.

GZA commenced remedial activities on the Hurley Property in late 1996. The first phase of the RA included demolition of the Grant Gear building, consolidation and containment of selected contaminated building materials within the subsurface boiler room and placement of a structural cap over the boiler room. This phase also included stockpiling of certain materials for eventual placement beneath the asphalt Cap and Cover areas constructed during the Soil/Brook Remediation phase of the RA at the Site. A significant portion of the Soil/Brook Remediation phase of work was conducted in 1997. The activities completed during the 1997 phase of the soil/brook remediation included excavation of Meadow Brook sediments to the grades established in the Army Corps of Engineers' (ACOE) brook restoration plans and specifications dated March 1996, excavation of on-Property PCB-impacted soils, and consolidation of excavated materials on-Property. Construction of the asphalt Cap and dense grade Cover was completed during the summer of 1998 concluding the construction phase of the RA. Punch list items were completed between July 30, 1998



and May 2, 2002. The work was conducted in accordance with the Remedial Action Work Plan (RAWP) and the associated Project Operations Plan (POP). At 921, Inc.'s (i.e., the property owner at the time) direction and with EPA's approval, certain redevelopment activities, including the installation of a Cape Cod berm, and the installation of asphalt paving in Cover and non-Cap/non-Cover areas were not performed by GZA. To satisfy the Massachusetts Department of Environmental Protection's (MADEP) Stormwater Management Policy requirements, some redevelopment activities were subsequently performed by the Site owner – a portion of the asphalted area was extended to tie into nearby catch basins and berms were installed to direct sheet flow. The design for this work was prepared by Toomey-Munson & Associates, Inc. (TMA) and was reviewed and approved by the EPA. A copy of the design plan was provided in Appendix A of the 2004 O&MP. According to EPA, the work was completed in August 2000, inspected by ACOE, and found to be acceptable.

In May of 2008, construction began for retail development on the Property and was substantially completed in 2009. This work was performed in accordance with the October 2006 Revised Work Plan for Redevelopment which was approved by EPA on October 30, 2006 as well as Supplements to that Work Plan dated January 21, 2008 and March 24, 2008. The development consists of a one-story retail building in the northern portion of the Property, and a one-story retail building in the eastern portion of the Property. Two one-story restaurants in the southern portion of the Site (on the former Reardon property) have been proposed, but have not yet been constructed. Figure 2 shows a plan view of the new buildings, Cap areas and monitoring well locations. The retail buildings are located in the Cover and non-Cap/non-Cover areas. The restaurants were proposed to be located in the non-Cap/non-Cover area. The Cap area and portions of the Cover and non-Cap/non-Cover areas have been paved for parking. Landscaping for the Cover area utilizes an, essentially, impermeable root barrier and drainage system which will restrict vegetation roots from contacting the Cover area material and drain water from within the landscaped area to the storm drain system. The Cap in place prior to construction was not altered or breeched. New pavement placed over the Cap is separated from the Cap with a marker barrier and drainage layer.

1.30 PURPOSE

In accordance with the requirements of the scope of work identified in the EMP, this Annual Report has been developed to report and evaluate the results of semi-annual monitoring of groundwater, as well as to document the monitoring and maintenance activities associated with the Cap and Cover under the O&MP. Monitoring of groundwater is used to evaluate trends and compare detected concentrations of Constituents of Concern (COCs) with the Site specific Risk Based Action Levels (RBALs). The Cap and Cover are periodically, visually evaluated to confirm that they are intact and, if necessary, repaired. The O&MP provides a more detailed description of the monitoring and maintenance requirements for both the Cap and Cover.

Surface water and sediment sampling is conducted on a bi-annual basis to support EPA's periodic reviews of the remedy. Surface water and sediment sampling was not conducted in 2013.



2.00 GROUNDWATER SAMPLING

The EPA-approved EMP specifies the collection and analysis (for PCB and volatile organic compounds (VOCs)) of groundwater samples from specific areas of the Site every six months. Samples were collected for the Spring sampling event on May 17, 2013 and for the Fall sampling event on November 26, 2013 from the following monitoring wells:

- MW-1A;
- MW-EW-11 (relocated as replacement for MW-2A);
- MW-3A-R;
- ME-10 (as a replacement for ME-11A);
- ME-17(B-4) (relocated); and,
- B-28 (relocated)

Locations of the monitoring wells sampled in 2013 are shown in Figure 2. GZA provided EPA seven day notice prior to both sampling events.

Samples collected in May 2013 and November 2013 were submitted to the ESS Laboratory for PCB analysis via EPA Method 8082 (Extraction Method 3510) and VOC analysis via EPA Method 8260B. Laboratory analytical results are provided in Appendix C.

2.10 SAMPLE COLLECTION PROCEDURES

Groundwater sampling was performed in accordance with the Standard Operating Procedures (SOPs) included as Appendix A of the EMP and the Quality Assurance Project Plan (QAPP). Groundwater samples were collected in accordance with the EPA Region I Low Flow Sampling Procedure (August 10, 1994).

Groundwater removed from the wells during well development and sampling was allowed to recharge through the subsurface as discussed in the EMP.

3.00 MEADOW BROOK SEDIMENTS AND SURFACE WATER SAMPLING

The EPA-approved EMP specifies collection and analysis for PCB's in sediment and surface water samples from different areas of Meadow Brook every two years. No sediment or surface water samples were collected from Meadow Brook in 2013. The next sediment and surface water samples from Meadow Brook are scheduled to be collected and analyzed in the Fall of 2014 in accordance with the requirements of the EMP.



4.00 ANALYTICAL RESULTS

4.10 GROUNDWATER

A summary of the results for COCs detected in groundwater samples collected by GZA in 2013 is presented in Table 1, along with the site-specific RBALs for these COCs. Table 1 presents those compounds that were detected for which RBALs have been developed. In addition to the compounds presented in Table 1, the following compounds for which RBALs do not exist were detected in groundwater samples collected in 2013; acetone, benzene, bromodichloromethane, chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,2,3-trichlorobenzene. The concentrations of compounds for which Site-specific RBALs have not been developed were below the current Massachusetts Contingency Plan RC-GW-2 Reportable Concentrations with the exception of chlorobenzene which was detected in monitoring well MW-1A at 620 micrograms per liter ($\mu\text{g/L}$), and has a RC-GW-2 Reportable Concentration of 200 $\mu\text{g/L}$. Chlorobenzene has historically been detected onsite at similar concentrations in monitoring well MW-1A. The concentrations of volatile organic compounds (VOCs) and Polychlorinated Biphenyls (PCBs) detected in groundwater samples collected from sampled monitoring wells continued to be significantly below their respective RBALs.

Table 2 presents a comparison of the maximum detected concentrations for each of the two sampling rounds conducted by GZA in 2013 to historical maxima from the 2001, 2002, and 2005 through 2012 monitoring events. As indicated in Table 2, the levels of COCs detected in groundwater samples collected in 2013 were generally within the same order of magnitude or less than historical data.

5.00 OPERATION AND MAINTENANCE

The Cap and Cover areas were visually inspected by GZA personnel twice during 2013. Additionally, the conditions of Site structures such as monitoring wells, drainage structures, and the detention basin were inspected during this time. During the 2013 monitoring period, visual inspections occurred in the Spring on May 17, 2013 and in the Fall on November 26, 2013.

5.10 VISUAL OBSERVATIONS

During the Spring and Fall inspections, minor cracks were observed in the building slabs, but there was no visual evidence of significant differential building settlement. Limited amounts of fallen stone and miscellaneous debris (i.e. garbage, overgrowth, etc.), were observed in the detention basin. The banks had sufficient stone to remain protected. No significant settlement of monitoring wells was observed during either the Spring or Fall inspection dates.

As reported in the 2012 Annual Monitoring Report, several asphalt sections were replaced in the Cap area in the vicinity of monitoring well MW-1A during the Site redevelopment activities in 2008-2009. The seams for these asphalt sections were



inspected in 2013 and were photographed during the May and November 2013 inspections. There is no evidence of significant differential settlement in those areas, and no indication that the seams had developed into cracks or that the Cap was compromised.

The November Site visit noted that the Retail B building appears to have begun redevelopment for a new tenant, as seen in the photographs.

The Operation and Maintenance Checklist for 2013 is presented in Appendix A. Photographs from the inspections are presented in Appendix B. Field notes for the Spring and Fall of 2013 are included in Appendix D.

5.20 MAINTENANCE ACTIVITIES

No maintenance activities were conducted in 2013.

6.00 FUTURE MONITORING ACTIVITIES

As discussed with EPA, GZA plans to evaluate the analytical results from the past several years to assess whether modifications to the sampling program are warranted. We anticipate having that analysis completed in the next several months.

Pending recommendation and approval of changes to the sampling program, per the requirements of the O&MP, the following monitoring and O&M activities are planned for 2014:

Environmental Monitoring

- Groundwater sample collection and analysis (Spring and Fall 2014)
- Meadow Brook sediment and surface water sampling (Fall 2014)

Operation and Maintenance

- Inspections of Cap, Cover and drainage system (Spring and Fall 2014)
- Maintenance (Spring and Fall 2014, if necessary)

Reporting

- Transmittal of monitoring data to EPA/DEP (Spring and Fall 2014)
- Annual monitoring report (January 2015)

TABLES

TABLE 1
GZA 2013 GROUNDWATER ANALYTICAL RESULTS
2013 ANNUAL MONITORING REPORT
Norwood PCB Superfund Site
Norwood, Massachusetts

Contaminants of Potential Concern	May 2013 Sampling event							November 2013 Sampling event							Site-Specific RBAL _{Mixing} (chemical specific)
	MW-3A-R	ME-10	ME-17(B4)	MW-1A	MW-1A (Duplicate)	MW-EW-11	B-28	MW-3A-R	ME-10	ME-17(B4)	MW-1A	MW-EW-11	B-28	ME-17(B4) (Duplicate)	
Volatile Organic Compounds (VOCs)															
1,2,4-Trichlorobenzene	ND	ND	2.4	44.4	79.4	ND	ND	ND	1.2	ND	83.1	ND	ND	ND	34,000
1,4-Dichlorobenzene	ND	ND	ND	43.8	42	ND	ND	ND	5	ND	72.4	ND	ND	ND	4,600
Total 1,2-Dichloroethenes	ND	ND	ND	9	11.9	36.7	ND	ND	2.7	ND	1.4	47.6	ND	ND	3,660,000
Tetrachloroethene	ND	ND	ND	ND	ND	11	ND	ND	ND	ND	ND	6.5	ND	ND	37,000
Trichloroethene	ND	ND	ND	35.3	57.8	140	ND	ND	ND	1.2	97.4	100	ND	ND	108,000
Vinyl Chloride	ND	ND	ND	9.4	8.7	ND	ND	ND	ND	ND	10.7	ND	ND	ND	310,000
Polychlorinated Biphenyls (PCBs)															
Total PCBs	ND	0.1	1.09	1.32	2.03	ND	0.55	ND	0.71	0.77	0.8	ND	0.27	0.28	4.3

NOTES:

1. All groundwater concentrations are in ug/l (ppb). See the laboratory reports for detection limits.
2. Concentrations in bold indicate exceedance of RBAL.
3. ND indicates concentrations below laboratory detection limits.
4. Site Specific RBAL Values from Table 4-2 of Final Technical Memo Development of Risk-Based Action Levels for the Protection of Ecological Receptors for Contaminants of Potential Concern in Groundwater at the Norwood PCB Superfund Site as Prepared by Foster Wheeler Environmental Corporation, March 2003.

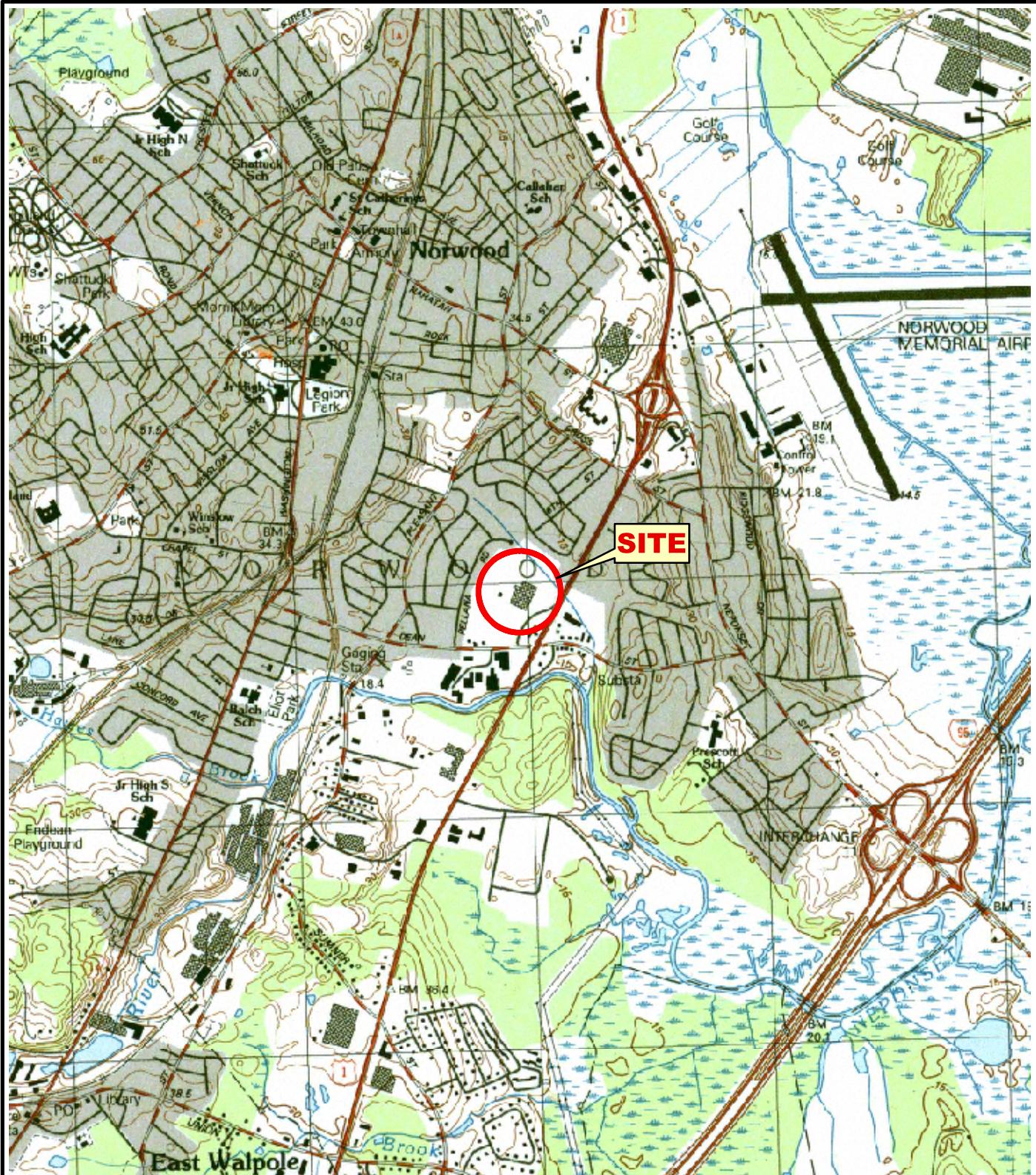
TABLE 2
SITEWIDE MAXIMUM OBSERVED GROUNDWATER ANALYTICAL RESULTS
2013 ANNUAL MONITORING REPORT
Norwood PCB Superfund Site
Norwood, Massachusetts

Contaminants of Potential Concern	Site-Specific RBAL _{Mixing} (chemical specific)	Historical Groundwater Data						2005 Groundwater Data		2006 Groundwater Data		2007 Groundwater Data		2008 Groundwater Data		2009 Groundwater Data		2010 Groundwater Data		2011 Groundwater Data		2012 Groundwater Data		2013 Groundwater Data		Contaminants of Potential Concern	
		October 2001	January 2002	April 2002	August 2002	May 2005	June 2005	November 2005	May 1, 2006	November 17, 2006	June 25, 2007	November/December 2007	April 10, 2008	November 13, 2008	May 28, 2009	November 9 & December 4, 2009	May 11, 2010	November 12, 2010	May 13, 2011	November 11, 2011	May 24, 2012	November 12, 2012	May 17, 2013	November 26, 2013			
		(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	
Volatile Organic Compounds (VOCs)																											Volatile Organic Compounds (VOCs)
1,2,4-Trichlorobenzene		34,000	930	1,200	1,200	1,200	500	1,500	490	670	850	1,313	69	9	980	780	64	255	429	84	370	521	33	79.4	83.1	1,2,4-Trichlorobenzene	
1,2,3-Trichlorobenzene			ND	ND	ND	ND	ND	ND	ND	ND	373	17	2,7	230	180.0	12	78.0	132	36.0	66	146.0	7	20.1	12.2	1,2,3-Trichlorobenzene		
1,2-Dichlorobenzene			ND	ND	ND	ND	ND	ND	ND	ND	31	ND	5.3	19	17.0	3.3	17.0	13.1	2.8	11.0	8.0	6.7	4.3	5.0	1,2-Dichlorobenzene		
1,3-Dichlorobenzene			ND	ND	ND	ND	ND	ND	ND	ND	54	20	27	89	86	35	150	42	10	230	46	25	42.2	66.5	1,3-Dichlorobenzene		
1,4-Dichlorobenzene		4,600	42	25	27	51	100	25	96	78	36	74	22	39	72	72	22	101	47	12	210	38	28	43.8	72.4	1,4-Dichlorobenzene	
Total 1,2-Dichloroethenes		3,660,000	1,800	2,000	2,600	2,600	228	420	369	448	468	514	518	460.4	103.6	56.0	73	256.1	131	35.0	64	75.0	30	36.7	47.6	Total 1,2-Dichloroethenes	
1,1-Dichloroethene			ND	ND	ND	ND	ND	ND	ND	ND	6.8	7.3	6.4	15	8.0	2.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,1-Dichloroethene	
1,1-Dichloroethane			ND	ND	ND	ND	ND	ND	ND	ND	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,1-Dichloroethane	
Benzene			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Benzene	
Chlorobenzene			ND	ND	ND	ND	ND	ND	ND	ND	ND	187	260	100	130	120	130	192	23	27	550	92	158	132.0	620.0	Chlorobenzene	
Tetrachloroethene		37,000	4	5	16	<1	3	58	ND	ND	ND	ND	ND	3.3	11	13	13	18	11	13	10	11	8	11.0	6.5	Tetrachloroethene	
Trichloroethene		108,000	1,600	1,400	4,000	1,800	2,300	2,100	1,800	1,100	1,100	1,922	250	84	970	550	210	733	657	190	150	188	104	140.0	100.0	Trichloroethene	
tert-Butyl alcohol (TBA)			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	51	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	tert-Butyl alcohol (TBA)	
Acetone			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	65	ND	ND	ND	ND	13.0	ND	14.0	ND	ND	108.0	ND	Acetone	
Bromodichloromethane			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Bromodichloromethane	
1,2,4-Trimethylbenzene			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.2	ND	2.7	ND	ND	ND	ND	ND	ND	ND	ND	1,2,4-Trimethylbenzene	
Tetrahydrofuran			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	11.0	ND	11	ND	ND	ND	ND	ND	ND	ND	ND	Tetrahydrofuran	
Vinyl Chloride		310,000	130	120	76	110	57	120	99	76	75	131	91	90	61	39	10	46	1	10	46	11	1	9.4	10.7	Vinyl Chloride	
Polychlorinated Biphenyls (PCBs)																										Polychlorinated Biphenyls (PCBs)	
Total PCBs		4.3	4.3	13.5	21.0	17.8	26.3	30.0	16.8	8.6	13.0	34.4	61.5	39	5.6	4.3	13	3.8	2.7	0.59	1.3	8.48	2.0	2.03	0.8	Total PCBs	
Wells exceeding PCB RBALs		4.3	ME-17 (B-4), B-10	ME-17 (B-4), MW-4A	ME-17 (B-4)	ME-17 (B-4)	MW-1A	ME-17 (B-4)	ME-17 (B-4)	MW-1A, ME-17(B4)	ME-17 (B-4), B-28	MW-1A, ME-17(B4)	ME-17 (B-4), MW-2A, MW-1A	MW-1A, ME-17(B4)	MW-1A	NONE	MW-1A, ME-10	NONE	NONE	NONE	NONE	ME-17	NONE	NONE	NONE	Wells exceeding PCB RBALs	

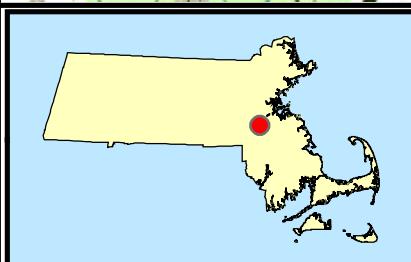
NOTES:

- 1) All groundwater concentrations are in ug/l (ppb)
- 2) Concentrations in bold indicate exceedance of RBAL.
- 3) ND indicates concentrations below laboratory detection limits
- 4) Site Specific RBAL Values and Historical Groundwater Data from Table 4-2 of Final Technical Memo Development of Risk-Based Action Levels for the Protection of Ecological Receptors for Contaminants of Potential Concern in Groundwater at the Norwood PCB Superfund Site as Prepared by Foster Wheeler Environmental Corporation, March 2003.

FIGURES



I:\18605\18605-00.STP\Figures\18605-00_SiteLocus_F01.mxd



SOURCE : SCANNED USGS TOPOGRAPHIC QUADRANGLES
SCANNED BY THE MASSACHUSETTS EXECUTIVE OFFICE OF
ENVIRONMENTAL AFFAIRS, MASSGIS. DISTRIBUTED JUNE, 2001.



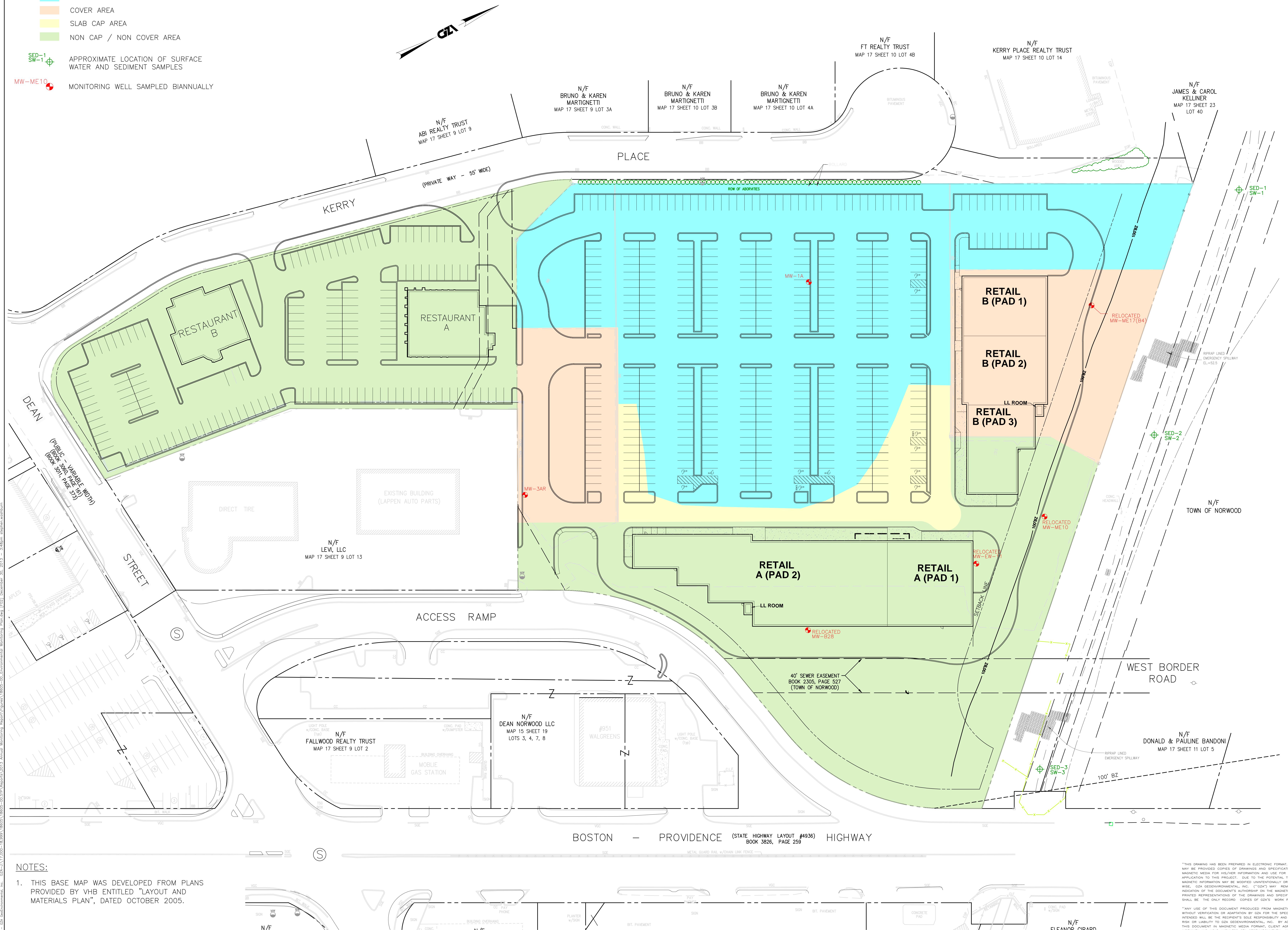
0 1,000 2,000 4,000 6,000
Feet



	PROJ. MGR.: RBP DESIGNED BY: DR REVIEWED BY: AJR OPERATOR: EMD DATE: 12-14-2005	LOCUS PLAN NORWOOD PCB SUPERFUND SITE NORWOOD, MASSACHUSETTS	JOB NO. 01.0018605.00 FIGURE NO. 1
--	---	---	--

LEGEND

- CAP AREA
- COVER AREA
- SLAB CAP AREA
- NON CAP / NON COVER AREA
- APPROXIMATE LOCATION OF SURFACE WATER AND SEDIMENT SAMPLES
- MW-ME10 MONITORING WELL SAMPLER BIANNUALLY



NORWOOD PCB SUPERFUND SITE 2013 ANNUAL REPORT NORWOOD, MASSACHUSETTS		PROJECT NO. 18605.00	
SAMPLING LOCATION PLAN		FIGURE NO. 2	
PROJ. MGR: MMS/RBP	DESIGNED BY: MMS	SCALE: 1" = 40 FEET	
REV. NO.	REVIEWED BY: AJR	0 20' 40'	
OPERATOR: GAS/OCC/EMD	OPERATOR: GZA		
CHECKER: DATE: 12-30-2013	Geoenvironmental, Inc. (781) 275-2700 Engineers and Scientists Norwood, MA 02062		
DESCRIPTION	REV. NO.	DATE	

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APPENDIX A

OPERATION AND MAINTENANCE CHECKLIST

OPERATION AND MAINTENANCE CHECKLIST
2013 Annual Report
Norwood PCB Superfund Site
Providence Highway
Norwood, Massachusetts

	Spring	Fall
Date EPA/ owner notified (at least 7 days prior to field activities)	YES	YES
Date(s) of field activities	5/17/2013	11/26/2013
Name(s) of field personnel	Bill Davis	Bill Davis
Equipment		
Asphalt crack sealant	NO	NO
Flat steel ruler	YES	YES
Laser level and rod	YES	YES
Surveyor's tape	YES	YES
Non-selective herbicide	NO	NO
Camera	YES	YES
Site Plan	YES	YES
PPE and Safety equipment	YES	YES
Cap observations		
Cracking Note on plan cracks longer than 12 inches and wider than ¼ inch	No cracks observed over cap, only cracks in the building floor	No cracks observed over cap, only cracks in the building floor
Sand/ debris	Some sand in the parking area	Some sand/trash in the parking area
Differential settlement	None observed	None observed
Appearance	Good	Good
Other	N/A	N/A
Cap repairs performed Note locations on plan	No repairs performed at this time	No repairs performed at this time
Cover observations		
Weed growth		

Note on Plan	None observed	None Observed
Sand/ debris	Some sand observed	Some sand observed
Other	N/A	N/A
Cover maintenance		
Herbicide application Quantity and type	N/A	N/A
Structure observations		
Monitoring wells		
Settlement	None observed	None observed
Drainage structures		
Settlement	None observed	None observed
Debris buildup	None observed	None observed
Structure maintenance		
Debris removal (quantity)	No debris removed	No debris removed
Detention basin observations		
Amount of growth	Well maintained	Well maintained
Condition of rip-rap	Good, some areas with fallen stone	Good, some areas with fallen stone
Degree of debris buildup		
Detention basin maintenance	Good condition	Good condition
Other observations	N/A	Retail B Building is being prepared to be occupied by a business
Lead field staff signature	<i>Dill Davis</i>	<i>Dill Davis</i>

APPENDIX B
PHOTOGRAPHS

May 17, 2013











November 26, 2013















APPENDIX C

GROUNDWATER ANALYTICAL RESULTS



CERTIFICATE OF ANALYSIS

Bill Davis
GZA GeoEnvironmental, Inc.
249 Vanderbilt Avenue
Norwood, MA 02062

RE: Grant Gear (01.0018605.00)
ESS Laboratory Work Order Number: 1305405

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED

By ESS Laboratory at 5:32 pm, May 28, 2013

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with NELAC Standards, A2LA and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1305405

SAMPLE RECEIPT

The following samples were received on May 20, 2013 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has performed and reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Data Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

For EPH soil samples, the aromatic range results have been corrected for identified cartridge contaminant in accordance with the CAM protocol.

Lab Number	Sample Name	Matrix	Analysis
1305405-01	MW-1A	Ground Water	8082A, 8260B
1305405-02	Duplicate	Ground Water	8082A, 8260B
1305405-03	ME-17	Ground Water	8082A, 8260B
1305405-04	ME-10	Ground Water	8082A, 8260B
1305405-05	MW-EW-11	Ground Water	8082A, 8260B
1305405-06	B-28	Ground Water	8082A, 8260B
1305405-07	MW-3AR	Ground Water	8082A, 8260B
1305405-08	Trip Blank	Aqueous	8260B



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1305405

PROJECT NARRATIVE

8082A Polychlorinated Biphenyls (PCB)

1305405-01

Lower value is used due to matrix interferences (LC).

Aroclor 1248

1305405-01

Percent difference between primary and confirmation results exceeds 40% (P).

Aroclor 1248

1305405-02

Lower value is used due to matrix interferences (LC).

Aroclor 1248

1305405-02

Percent difference between primary and confirmation results exceeds 40% (P).

Aroclor 1248

1305405-04

Lower value is used due to matrix interferences (LC).

Aroclor 1254

1305405-04

Percent difference between primary and confirmation results exceeds 40% (P).

Aroclor 1254

1305405-07

Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).

Decachlorobiphenyl (25% @ 30-150%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[Definitions of Quality Control Parameters](#)

[Semivolatile Organics Internal Standard Information](#)

[Semivolatile Organics Surrogate Information](#)

[Volatile Organics Internal Standard Information](#)

[Volatile Organics Surrogate Information](#)

[EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1305405

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5035 - Solid Purge and Trap



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1305405

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1305405-01 through 1305405-08**

Matrices: Ground Water/Surface Water Soil/Sediment Drinking Water Air Other: _____

CAM Protocol (check all that apply below):

- | | | | | | |
|------------------------------|-------------------------------|-----------------------------|------------------------------------|--|-----------------------------|
| (X) 8260 VOC
CAM II A | () 7470/7471 Hg
CAM III B | () MassDEP VPH
CAM IV A | () 8081 Pesticides
CAM V B | () 7196 Hex Cr
CAM VI B | () MassDEP APH
CAM IX A |
| () 8270 SVOC
CAM II B | () 7010 Metals
CAM III C | () MassDEP EPH
CAM IV B | () 8151 Herbicides
CAM V C | () 8330 Explosives
CAM VIII A | () TO-15 VOC
CAM IX B |
| () 6010 Metals
CAM III A | () 6020 Metals
CAM III D | (X) 8082 PCB
CAM V A | () 6860 Perchlorate
CAM VIII B | () 9014 Total Cyanide/PAC
CAM VI A | |

Affirmative responses to questions A through F are required for Presumptive Certainty'status

- A Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? Yes (X) No ()
- B Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed? Yes (X) No ()
- C Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? Yes (X) No ()
- D Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? Yes (X) No ()
- E a. VPH, EPH, APH and TO-15 only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). Yes () No ()
b. APH and TO-15 Methods only: Was the complete analyte list reported for each method? Yes () No ()
- F Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)? Yes (X) No ()

Responses to Questions G, H and I below are required for Presumptive Certainty'status

- G Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? Yes (X) No ()*
- Data User Note: Data that achieve Presumptive Certainty'status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40.1056 (2)(k) and WSC-07-350.***
- H Were all QC performance standards specified in the CAM protocol(s) achieved? Yes () No (X)*
- I Were results reported for the complete analyte list specified in the selected CAM protocol(s)? Yes (X) No ()*

*All negative responses must be addressed in an attached laboratory narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: _____

Printed Name: Laurel Stoddard

Date: May 28, 2013

Position: Laboratory Director



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: MW-1A

Date Sampled: 05/17/13 09:39

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-01

Sample Matrix: Ground Water

Units: ug/L

Analyst: SEP

Prepared: 5/23/13 12:40

Cleanup Method: 3665A

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	05/27/13 3:48		CE32304
Aroclor 1221	ND (0.09)		8082A		1	05/27/13 3:48		CE32304
Aroclor 1232	ND (0.09)		8082A		1	05/27/13 3:48		CE32304
Aroclor 1242	ND (0.09)		8082A		1	05/27/13 3:48		CE32304
Aroclor 1248	LC, P 0.43 (0.09)		8082A		1	05/27/13 3:48		CE32304
Aroclor 1254	0.89 (0.09)		8082A		1	05/27/13 3:48		CE32304
Aroclor 1260	ND (0.09)		8082A		1	05/27/13 3:48		CE32304
Aroclor 1262	ND (0.09)		8082A		1	05/27/13 3:48		CE32304
Aroclor 1268	ND (0.09)		8082A		1	05/27/13 3:48		CE32304

	%Recovery	Qualifier	Limits
<i>Surrogate: Decachlorobiphenyl</i>	52 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	54 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	64 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	63 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: MW-1A

Date Sampled: 05/17/13 09:39

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-01

Sample Matrix: Ground Water

Units: ug/L

Analyst: MJM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
1,1,1-Trichloroethane	ND (1.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
1,1,2,2-Tetrachloroethane	ND (0.5)	8260B		1		05/21/13 18:42	CWE0253	CE32132
1,1,2-Trichloroethane	ND (1.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
1,1-Dichloroethane	ND (1.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
1,1-Dichloroethene	ND (1.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
1,1-Dichloropropene	ND (2.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
1,2,3-Trichlorobenzene	11.1 (1.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
1,2,3-Trichloropropane	ND (1.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
1,2,4-Trichlorobenzene	44.4 (1.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
1,2,4-Trimethylbenzene	ND (1.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
1,2-Dibromo-3-Chloropropane	ND (5.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
1,2-Dibromoethane	ND (1.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
1,2-Dichlorobenzene	3.5 (1.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
1,2-Dichloroethane	ND (1.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
1,2-Dichloropropane	ND (1.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
1,3,5-Trimethylbenzene	ND (1.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
1,3-Dichlorobenzene	35.6 (1.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
1,3-Dichloropropane	ND (1.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
1,4-Dichlorobenzene	43.8 (1.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
1,4-Dioxane - Screen	ND (500)	8260B		1		05/21/13 18:42	CWE0253	CE32132
2,2-Dichloropropane	ND (1.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
2-Butanone	ND (10.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
2-Chlorotoluene	ND (1.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
2-Hexanone	ND (10.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
4-Chlorotoluene	ND (1.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
4-Isopropyltoluene	ND (1.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
4-Methyl-2-Pentanone	ND (10.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
Acetone	ND (10.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
Benzene	ND (1.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132
Bromobenzene	ND (2.0)	8260B		1		05/21/13 18:42	CWE0253	CE32132



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: MW-1A

Date Sampled: 05/17/13 09:39

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-01

Sample Matrix: Ground Water

Units: ug/L

Analyst: MJM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Bromodichloromethane	ND (0.6)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Bromoform	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Bromomethane	ND (2.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Carbon Disulfide	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Carbon Tetrachloride	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Chlorobenzene	132 (10.0)		8260B		10	05/22/13 12:27	CWE0253	CE32132
Chloroethane	ND (2.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Chloroform	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Chloromethane	ND (2.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
cis-1,2-Dichloroethene	9.0 (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Dibromochloromethane	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Dibromomethane	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Dichlorodifluoromethane	ND (2.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Diethyl Ether	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Di-isopropyl ether	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Ethylbenzene	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Hexachlorobutadiene	ND (0.6)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Hexachloroethane	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Isopropylbenzene	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Methylene Chloride	ND (2.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Naphthalene	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
n-Butylbenzene	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
n-Propylbenzene	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
sec-Butylbenzene	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Styrene	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
tert-Butylbenzene	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: MW-1A

Date Sampled: 05/17/13 09:39

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-01

Sample Matrix: Ground Water

Units: ug/L

Analyst: MJM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrachloroethene	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Tetrahydrofuran	ND (5.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Toluene	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Trichloroethene	35.3 (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Trichlorofluoromethane	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Vinyl Chloride	9.4 (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Xylene O	ND (1.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Xylene P,M	ND (2.0)		8260B		1	05/21/13 18:42	CWE0253	CE32132
Xylenes (Total)	ND (2.0)		8260B		1	05/21/13 18:42		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	103 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	103 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	102 %		70-130
<i>Surrogate: Toluene-d8</i>	91 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: Duplicate

Date Sampled: 05/17/13 09:45

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-02

Sample Matrix: Ground Water

Units: ug/L

Analyst: SEP

Prepared: 5/23/13 12:40

Cleanup Method: 3665A

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	05/27/13 4:07		CE32304
Aroclor 1221	ND (0.09)		8082A		1	05/27/13 4:07		CE32304
Aroclor 1232	ND (0.09)		8082A		1	05/27/13 4:07		CE32304
Aroclor 1242	ND (0.09)		8082A		1	05/27/13 4:07		CE32304
Aroclor 1248	LC, P 0.67 (0.09)		8082A		1	05/27/13 4:07		CE32304
Aroclor 1254	1.36 (0.09)		8082A		1	05/27/13 4:07		CE32304
Aroclor 1260	ND (0.09)		8082A		1	05/27/13 4:07		CE32304
Aroclor 1262	ND (0.09)		8082A		1	05/27/13 4:07		CE32304
Aroclor 1268	ND (0.09)		8082A		1	05/27/13 4:07		CE32304

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	55 %		30-150
Surrogate: Decachlorobiphenyl [2C]	61 %		30-150
Surrogate: Tetrachloro-m-xylene	65 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	61 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: Duplicate

Date Sampled: 05/17/13 09:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-02

Sample Matrix: Ground Water

Units: ug/L

Analyst: MJM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
1,1,1-Trichloroethane	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	05/21/13 19:09	CWE0253	CE32132
1,1,2-Trichloroethane	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
1,1-Dichloroethane	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
1,1-Dichloroethene	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
1,1-Dichloropropene	ND (2.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
1,2,3-Trichlorobenzene	20.1 (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
1,2,3-Trichloropropane	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
1,2,4-Trichlorobenzene	79.4 (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
1,2-Dibromoethane	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
1,2-Dichlorobenzene	4.3 (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
1,2-Dichloroethane	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
1,2-Dichloropropane	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
1,3-Dichlorobenzene	42.2 (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
1,3-Dichloropropane	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
1,4-Dichlorobenzene	42.0 (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
1,4-Dioxane - Screen	ND (500)		8260B		1	05/21/13 19:09	CWE0253	CE32132
2,2-Dichloropropane	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
2-Butanone	ND (10.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
2-Chlorotoluene	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
2-Hexanone	ND (10.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
4-Chlorotoluene	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
4-Isopropyltoluene	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Acetone	ND (10.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Benzene	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Bromobenzene	ND (2.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: Duplicate

Date Sampled: 05/17/13 09:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-02

Sample Matrix: Ground Water

Units: ug/L

Analyst: MJM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Bromodichloromethane	ND (0.6)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Bromoform	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Bromomethane	ND (2.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Carbon Disulfide	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Carbon Tetrachloride	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Chlorobenzene	129 (10.0)		8260B		10	05/22/13 12:54	CWE0253	CE32132
Chloroethane	ND (2.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Chloroform	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Chloromethane	ND (2.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
cis-1,2-Dichloroethene	11.9 (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Dibromochloromethane	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Dibromomethane	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Dichlorodifluoromethane	ND (2.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Diethyl Ether	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Di-isopropyl ether	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Ethylbenzene	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Hexachlorobutadiene	ND (0.6)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Hexachloroethane	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Isopropylbenzene	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Methylene Chloride	ND (2.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Naphthalene	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
n-Butylbenzene	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
n-Propylbenzene	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
sec-Butylbenzene	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Styrene	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
tert-Butylbenzene	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: Duplicate

Date Sampled: 05/17/13 09:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-02

Sample Matrix: Ground Water

Units: ug/L

Analyst: MJM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrachloroethene	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Tetrahydrofuran	ND (5.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Toluene	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Trichloroethene	57.8 (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Trichlorofluoromethane	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Vinyl Chloride	8.7 (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Xylene O	ND (1.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Xylene P,M	ND (2.0)		8260B		1	05/21/13 19:09	CWE0253	CE32132
Xylenes (Total)	ND (2.0)		8260B		1	05/21/13 19:09		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	100 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	107 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	101 %		70-130
<i>Surrogate: Toluene-d8</i>	96 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: ME-17

Date Sampled: 05/17/13 10:25

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-03

Sample Matrix: Ground Water

Units: ug/L

Analyst: SEP

Prepared: 5/23/13 12:40

Cleanup Method: 3665A

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	05/27/13 4:27		CE32304
Aroclor 1221	ND (0.09)		8082A		1	05/27/13 4:27		CE32304
Aroclor 1232	ND (0.09)		8082A		1	05/27/13 4:27		CE32304
Aroclor 1242	ND (0.09)		8082A		1	05/27/13 4:27		CE32304
Aroclor 1248	0.48 (0.09)		8082A		1	05/27/13 4:27		CE32304
Aroclor 1254	0.61 (0.09)		8082A		1	05/27/13 4:27		CE32304
Aroclor 1260	ND (0.09)		8082A		1	05/27/13 4:27		CE32304
Aroclor 1262	ND (0.09)		8082A		1	05/27/13 4:27		CE32304
Aroclor 1268	ND (0.09)		8082A		1	05/27/13 4:27		CE32304

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	57 %		30-150
Surrogate: Decachlorobiphenyl [2C]	60 %		30-150
Surrogate: Tetrachloro-m-xylene	72 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	70 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: ME-17

Date Sampled: 05/17/13 10:25

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-03

Sample Matrix: Ground Water

Units: ug/L

Analyst: MJM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
1,1,1-Trichloroethane	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	05/21/13 19:36	CWE0253	CE32132
1,1,2-Trichloroethane	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
1,1-Dichloroethane	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
1,1-Dichloroethene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
1,1-Dichloropropene	ND (2.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
1,2,3-Trichloropropane	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
1,2,4-Trichlorobenzene	2.4 (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
1,2-Dibromoethane	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
1,2-Dichlorobenzene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
1,2-Dichloroethane	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
1,2-Dichloropropane	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
1,3-Dichlorobenzene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
1,3-Dichloropropane	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
1,4-Dichlorobenzene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
1,4-Dioxane - Screen	ND (500)		8260B		1	05/21/13 19:36	CWE0253	CE32132
2,2-Dichloropropane	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
2-Butanone	ND (10.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
2-Chlorotoluene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
2-Hexanone	ND (10.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
4-Chlorotoluene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
4-Isopropyltoluene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Acetone	108 (10.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Benzene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Bromobenzene	ND (2.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: ME-17

Date Sampled: 05/17/13 10:25

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-03

Sample Matrix: Ground Water

Units: ug/L

Analyst: MJM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Bromodichloromethane	ND (0.6)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Bromoform	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Bromomethane	ND (2.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Carbon Disulfide	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Carbon Tetrachloride	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Chlorobenzene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Chloroethane	ND (2.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Chloroform	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Chloromethane	ND (2.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Dibromochloromethane	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Dibromomethane	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Dichlorodifluoromethane	ND (2.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Diethyl Ether	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Di-isopropyl ether	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Ethylbenzene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Hexachlorobutadiene	ND (0.6)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Hexachloroethane	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Isopropylbenzene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Methylene Chloride	ND (2.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Naphthalene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
n-Butylbenzene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
n-Propylbenzene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
sec-Butylbenzene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Styrene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
tert-Butylbenzene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: ME-17

Date Sampled: 05/17/13 10:25

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-03

Sample Matrix: Ground Water

Units: ug/L

Analyst: MJM

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrachloroethene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Tetrahydrofuran	ND (5.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Toluene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Trichloroethene	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Trichlorofluoromethane	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Vinyl Chloride	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Xylene O	ND (1.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Xylene P,M	ND (2.0)		8260B		1	05/21/13 19:36	CWE0253	CE32132
Xylenes (Total)	ND (2.0)		8260B		1	05/21/13 19:36		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	103 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	104 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	102 %		70-130
<i>Surrogate: Toluene-d8</i>	96 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: ME-10

Date Sampled: 05/17/13 11:40

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-04

Sample Matrix: Ground Water

Units: ug/L

Analyst: SEP

Prepared: 5/23/13 12:40

Cleanup Method: 3665A

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	05/27/13 4:46		CE32304
Aroclor 1221	ND (0.09)		8082A		1	05/27/13 4:46		CE32304
Aroclor 1232	ND (0.09)		8082A		1	05/27/13 4:46		CE32304
Aroclor 1242	ND (0.09)		8082A		1	05/27/13 4:46		CE32304
Aroclor 1248	ND (0.09)		8082A		1	05/27/13 4:46		CE32304
Aroclor 1254	LC, P 0.10 (0.09)		8082A		1	05/27/13 4:46		CE32304
Aroclor 1260	ND (0.09)		8082A		1	05/27/13 4:46		CE32304
Aroclor 1262	ND (0.09)		8082A		1	05/27/13 4:46		CE32304
Aroclor 1268	ND (0.09)		8082A		1	05/27/13 4:46		CE32304

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	77 %		30-150
Surrogate: Decachlorobiphenyl [2C]	75 %		30-150
Surrogate: Tetrachloro-m-xylene	51 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	59 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: ME-10

Date Sampled: 05/17/13 11:40

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-04

Sample Matrix: Ground Water

Units: ug/L

Analyst: MJM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
1,1,1-Trichloroethane	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	05/21/13 20:03	CWE0253	CE32132
1,1,2-Trichloroethane	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
1,1-Dichloroethane	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
1,1-Dichloroethene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
1,1-Dichloropropene	ND (2.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
1,2,3-Trichloropropane	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
1,2-Dibromoethane	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
1,2-Dichlorobenzene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
1,2-Dichloroethane	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
1,2-Dichloropropane	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
1,3-Dichlorobenzene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
1,3-Dichloropropane	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
1,4-Dichlorobenzene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
1,4-Dioxane - Screen	ND (500)		8260B		1	05/21/13 20:03	CWE0253	CE32132
2,2-Dichloropropane	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
2-Butanone	ND (10.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
2-Chlorotoluene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
2-Hexanone	ND (10.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
4-Chlorotoluene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
4-Isopropyltoluene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Acetone	ND (10.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Benzene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Bromobenzene	ND (2.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: ME-10

Date Sampled: 05/17/13 11:40

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-04

Sample Matrix: Ground Water

Units: ug/L

Analyst: MJM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Bromodichloromethane	ND (0.6)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Bromoform	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Bromomethane	ND (2.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Carbon Disulfide	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Carbon Tetrachloride	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Chlorobenzene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Chloroethane	ND (2.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Chloroform	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Chloromethane	ND (2.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Dibromochloromethane	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Dibromomethane	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Dichlorodifluoromethane	ND (2.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Diethyl Ether	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Di-isopropyl ether	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Ethylbenzene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Hexachlorobutadiene	ND (0.6)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Hexachloroethane	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Isopropylbenzene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Methylene Chloride	ND (2.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Naphthalene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
n-Butylbenzene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
n-Propylbenzene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
sec-Butylbenzene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Styrene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
tert-Butylbenzene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: ME-10

Date Sampled: 05/17/13 11:40

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-04

Sample Matrix: Ground Water

Units: ug/L

Analyst: MJM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrachloroethene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Tetrahydrofuran	ND (5.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Toluene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Trichloroethene	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Trichlorofluoromethane	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Vinyl Chloride	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Xylene O	ND (1.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Xylene P,M	ND (2.0)		8260B		1	05/21/13 20:03	CWE0253	CE32132
Xylenes (Total)	ND (2.0)		8260B		1	05/21/13 20:03		[CALC]

%Recovery Qualifier Limits

<i>Surrogate: 1,2-Dichloroethane-d4</i>	100 %	70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	103 %	70-130
<i>Surrogate: Dibromofluoromethane</i>	101 %	70-130
<i>Surrogate: Toluene-d8</i>	95 %	70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: MW-EW-11

Date Sampled: 05/17/13 11:25

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-05

Sample Matrix: Ground Water

Units: ug/L

Analyst: SEP

Prepared: 5/23/13 12:40

Cleanup Method: 3665A

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	05/27/13 5:05		CE32304
Aroclor 1221	ND (0.09)		8082A		1	05/27/13 5:05		CE32304
Aroclor 1232	ND (0.09)		8082A		1	05/27/13 5:05		CE32304
Aroclor 1242	ND (0.09)		8082A		1	05/27/13 5:05		CE32304
Aroclor 1248	ND (0.09)		8082A		1	05/27/13 5:05		CE32304
Aroclor 1254	ND (0.09)		8082A		1	05/27/13 5:05		CE32304
Aroclor 1260	ND (0.09)		8082A		1	05/27/13 5:05		CE32304
Aroclor 1262	ND (0.09)		8082A		1	05/27/13 5:05		CE32304
Aroclor 1268	ND (0.09)		8082A		1	05/27/13 5:05		CE32304

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	77 %		30-150
Surrogate: Decachlorobiphenyl [2C]	78 %		30-150
Surrogate: Tetrachloro-m-xylene	41 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	41 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: MW-EW-11

Date Sampled: 05/17/13 11:25

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-05

Sample Matrix: Ground Water

Units: ug/L

Analyst: MJM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
1,1,1-Trichloroethane	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	05/21/13 20:30	CWE0253	CE32132
1,1,2-Trichloroethane	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
1,1-Dichloroethane	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
1,1-Dichloroethene	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
1,1-Dichloropropene	ND (2.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
1,2,3-Trichlorobenzene	1.3 (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
1,2,3-Trichloropropane	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
1,2-Dibromoethane	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
1,2-Dichlorobenzene	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
1,2-Dichloroethane	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
1,2-Dichloropropane	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
1,3-Dichlorobenzene	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
1,3-Dichloropropane	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
1,4-Dichlorobenzene	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
1,4-Dioxane - Screen	ND (500)		8260B		1	05/21/13 20:30	CWE0253	CE32132
2,2-Dichloropropane	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
2-Butanone	ND (10.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
2-Chlorotoluene	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
2-Hexanone	ND (10.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
4-Chlorotoluene	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
4-Isopropyltoluene	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Acetone	ND (10.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Benzene	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Bromobenzene	ND (2.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: MW-EW-11

Date Sampled: 05/17/13 11:25

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-05

Sample Matrix: Ground Water

Units: ug/L

Analyst: MJM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Bromodichloromethane	1.5 (0.6)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Bromoform	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Bromomethane	ND (2.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Carbon Disulfide	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Carbon Tetrachloride	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Chlorobenzene	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Chloroethane	ND (2.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Chloroform	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Chloromethane	ND (2.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
cis-1,2-Dichloroethene	36.7 (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Dibromochloromethane	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Dibromomethane	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Dichlorodifluoromethane	ND (2.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Diethyl Ether	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Di-isopropyl ether	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Ethylbenzene	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Hexachlorobutadiene	ND (0.6)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Hexachloroethane	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Isopropylbenzene	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Methylene Chloride	ND (2.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Naphthalene	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
n-Butylbenzene	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
n-Propylbenzene	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
sec-Butylbenzene	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Styrene	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
tert-Butylbenzene	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: MW-EW-11

Date Sampled: 05/17/13 11:25

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-05

Sample Matrix: Ground Water

Units: ug/L

Analyst: MJM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrachloroethene	11.0 (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Tetrahydrofuran	ND (5.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Toluene	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Trichloroethene	140 (10.0)		8260B		10	05/22/13 13:21	CWE0253	CE32132
Trichlorofluoromethane	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Vinyl Chloride	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Xylene O	ND (1.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Xylene P,M	ND (2.0)		8260B		1	05/21/13 20:30	CWE0253	CE32132
Xylenes (Total)	ND (2.0)		8260B		1	05/21/13 20:30		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	100 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	102 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	102 %		70-130
<i>Surrogate: Toluene-d8</i>	95 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: B-28

Date Sampled: 05/17/13 01:20

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-06

Sample Matrix: Ground Water

Units: ug/L

Analyst: SEP

Prepared: 5/23/13 12:40

Cleanup Method: 3665A

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	05/27/13 5:24		CE32304
Aroclor 1221	ND (0.09)		8082A		1	05/27/13 5:24		CE32304
Aroclor 1232	ND (0.09)		8082A		1	05/27/13 5:24		CE32304
Aroclor 1242	ND (0.09)		8082A		1	05/27/13 5:24		CE32304
Aroclor 1248	ND (0.09)		8082A		1	05/27/13 5:24		CE32304
Aroclor 1254	0.55 (0.09)		8082A		1	05/27/13 5:24		CE32304
Aroclor 1260	ND (0.09)		8082A		1	05/27/13 5:24		CE32304
Aroclor 1262	ND (0.09)		8082A		1	05/27/13 5:24		CE32304
Aroclor 1268	ND (0.09)		8082A		1	05/27/13 5:24		CE32304

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	45 %		30-150
Surrogate: Decachlorobiphenyl [2C]	47 %		30-150
Surrogate: Tetrachloro-m-xylene	57 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	63 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: B-28

Date Sampled: 05/17/13 01:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-06

Sample Matrix: Ground Water

Units: ug/L

Analyst: MJM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
1,1,1-Trichloroethane	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	05/21/13 20:57	CWE0253	CE32132
1,1,2-Trichloroethane	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
1,1-Dichloroethane	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
1,1-Dichloroethene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
1,1-Dichloropropene	ND (2.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
1,2,3-Trichloropropane	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
1,2-Dibromoethane	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
1,2-Dichlorobenzene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
1,2-Dichloroethane	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
1,2-Dichloropropane	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
1,3-Dichlorobenzene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
1,3-Dichloropropane	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
1,4-Dichlorobenzene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
1,4-Dioxane - Screen	ND (500)		8260B		1	05/21/13 20:57	CWE0253	CE32132
2,2-Dichloropropane	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
2-Butanone	ND (10.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
2-Chlorotoluene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
2-Hexanone	ND (10.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
4-Chlorotoluene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
4-Isopropyltoluene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Acetone	ND (10.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Benzene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Bromobenzene	ND (2.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: B-28

Date Sampled: 05/17/13 01:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-06

Sample Matrix: Ground Water

Units: ug/L

Analyst: MJM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Bromodichloromethane	ND (0.6)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Bromoform	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Bromomethane	ND (2.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Carbon Disulfide	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Carbon Tetrachloride	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Chlorobenzene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Chloroethane	ND (2.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Chloroform	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Chloromethane	ND (2.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Dibromochloromethane	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Dibromomethane	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Dichlorodifluoromethane	ND (2.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Diethyl Ether	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Di-isopropyl ether	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Ethylbenzene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Hexachlorobutadiene	ND (0.6)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Hexachloroethane	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Isopropylbenzene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Methylene Chloride	ND (2.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Naphthalene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
n-Butylbenzene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
n-Propylbenzene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
sec-Butylbenzene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Styrene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
tert-Butylbenzene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: B-28

Date Sampled: 05/17/13 01:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-06

Sample Matrix: Ground Water

Units: ug/L

Analyst: MJM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrachloroethene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Tetrahydrofuran	ND (5.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Toluene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Trichloroethene	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Trichlorofluoromethane	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Vinyl Chloride	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Xylene O	ND (1.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Xylene P,M	ND (2.0)		8260B		1	05/21/13 20:57	CWE0253	CE32132
Xylenes (Total)	ND (2.0)		8260B		1	05/21/13 20:57		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	105 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	105 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	105 %		70-130
<i>Surrogate: Toluene-d8</i>	94 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: MW-3AR

Date Sampled: 05/17/13 12:45

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-07

Sample Matrix: Ground Water

Units: ug/L

Analyst: ML

Prepared: 5/23/13 12:40

Cleanup Method: 3665A

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	05/28/13 12:52		CE32829
Aroclor 1221	ND (0.09)		8082A		1	05/28/13 12:52		CE32829
Aroclor 1232	ND (0.09)		8082A		1	05/28/13 12:52		CE32829
Aroclor 1242	ND (0.09)		8082A		1	05/28/13 12:52		CE32829
Aroclor 1248	ND (0.09)		8082A		1	05/28/13 12:52		CE32829
Aroclor 1254	ND (0.09)		8082A		1	05/28/13 12:52		CE32829
Aroclor 1260	ND (0.09)		8082A		1	05/28/13 12:52		CE32829
Aroclor 1262	ND (0.09)		8082A		1	05/28/13 12:52		CE32829
Aroclor 1268	ND (0.09)		8082A		1	05/28/13 12:52		CE32829

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	25 %	SM	30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	33 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	37 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	41 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: MW-3AR

Date Sampled: 05/17/13 12:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-07

Sample Matrix: Ground Water

Units: ug/L

Analyst: MJM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
1,1,1-Trichloroethane	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	05/21/13 21:24	CWE0253	CE32132
1,1,2-Trichloroethane	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
1,1-Dichloroethane	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
1,1-Dichloroethene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
1,1-Dichloropropene	ND (2.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
1,2,3-Trichloropropane	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
1,2-Dibromoethane	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
1,2-Dichlorobenzene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
1,2-Dichloroethane	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
1,2-Dichloropropane	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
1,3-Dichlorobenzene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
1,3-Dichloropropane	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
1,4-Dichlorobenzene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
1,4-Dioxane - Screen	ND (500)		8260B		1	05/21/13 21:24	CWE0253	CE32132
2,2-Dichloropropane	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
2-Butanone	ND (10.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
2-Chlorotoluene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
2-Hexanone	ND (10.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
4-Chlorotoluene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
4-Isopropyltoluene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Acetone	ND (10.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Benzene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Bromobenzene	ND (2.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: MW-3AR

Date Sampled: 05/17/13 12:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-07

Sample Matrix: Ground Water

Units: ug/L

Analyst: MJM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Bromodichloromethane	ND (0.6)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Bromoform	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Bromomethane	ND (2.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Carbon Disulfide	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Carbon Tetrachloride	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Chlorobenzene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Chloroethane	ND (2.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Chloroform	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Chloromethane	ND (2.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Dibromochloromethane	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Dibromomethane	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Dichlorodifluoromethane	ND (2.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Diethyl Ether	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Di-isopropyl ether	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Ethylbenzene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Hexachlorobutadiene	ND (0.6)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Hexachloroethane	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Isopropylbenzene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Methylene Chloride	ND (2.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Naphthalene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
n-Butylbenzene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
n-Propylbenzene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
sec-Butylbenzene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Styrene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
tert-Butylbenzene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: MW-3AR

Date Sampled: 05/17/13 12:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-07

Sample Matrix: Ground Water

Units: ug/L

Analyst: MJM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrachloroethene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Tetrahydrofuran	ND (5.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Toluene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Trichloroethene	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Trichlorofluoromethane	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Vinyl Chloride	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Xylene O	ND (1.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Xylene P,M	ND (2.0)		8260B		1	05/21/13 21:24	CWE0253	CE32132
Xylenes (Total)	ND (2.0)		8260B		1	05/21/13 21:24		[CALC]

%Recovery Qualifier Limits

<i>Surrogate: 1,2-Dichloroethane-d4</i>	103 %	70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	104 %	70-130
<i>Surrogate: Dibromofluoromethane</i>	103 %	70-130
<i>Surrogate: Toluene-d8</i>	96 %	70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: Trip Blank

Date Sampled: 05/17/13 00:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-08

Sample Matrix: Aqueous

Units: ug/L

Analyst: MJM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
1,1,1-Trichloroethane	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	05/21/13 18:14	CWE0253	CE32132
1,1,2-Trichloroethane	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
1,1-Dichloroethane	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
1,1-Dichloroethene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
1,1-Dichloropropene	ND (2.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
1,2,3-Trichloropropane	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
1,2-Dibromoethane	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
1,2-Dichlorobenzene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
1,2-Dichloroethane	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
1,2-Dichloropropane	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
1,3-Dichlorobenzene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
1,3-Dichloropropane	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
1,4-Dichlorobenzene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
1,4-Dioxane - Screen	ND (500)		8260B		1	05/21/13 18:14	CWE0253	CE32132
2,2-Dichloropropane	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
2-Butanone	ND (10.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
2-Chlorotoluene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
2-Hexanone	ND (10.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
4-Chlorotoluene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
4-Isopropyltoluene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Acetone	ND (10.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Benzene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Bromobenzene	ND (2.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: Trip Blank

Date Sampled: 05/17/13 00:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-08

Sample Matrix: Aqueous

Units: ug/L

Analyst: MJM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Bromodichloromethane	ND (0.6)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Bromoform	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Bromomethane	ND (2.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Carbon Disulfide	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Carbon Tetrachloride	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Chlorobenzene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Chloroethane	ND (2.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Chloroform	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Chloromethane	ND (2.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Dibromochloromethane	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Dibromomethane	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Dichlorodifluoromethane	ND (2.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Diethyl Ether	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Di-isopropyl ether	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Ethylbenzene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Hexachlorobutadiene	ND (0.6)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Hexachloroethane	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Isopropylbenzene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Methylene Chloride	ND (2.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Naphthalene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
n-Butylbenzene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
n-Propylbenzene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
sec-Butylbenzene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Styrene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
tert-Butylbenzene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: Trip Blank

Date Sampled: 05/17/13 00:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1305405

ESS Laboratory Sample ID: 1305405-08

Sample Matrix: Aqueous

Units: ug/L

Analyst: MJM

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrachloroethene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Tetrahydrofuran	ND (5.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Toluene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Trichloroethene	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Trichlorofluoromethane	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Vinyl Chloride	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Xylene O	ND (1.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Xylene P,M	ND (2.0)		8260B		1	05/21/13 18:14	CWE0253	CE32132
Xylenes (Total)	ND (2.0)		8260B		1	05/21/13 18:14		[CALC]

%Recovery Qualifier Limits

Surrogate: 1,2-Dichloroethane-d4

104 % 70-130

Surrogate: 4-Bromofluorobenzene

104 % 70-130

Surrogate: Dibromofluoromethane

103 % 70-130

Surrogate: Toluene-d8

95 % 70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1305405

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8082A Polychlorinated Biphenyls (PCB)

Batch CE32304 - 3510C

Blank

Aroclor 1016	ND	0.10	ug/L
Aroclor 1016 (1)	ND	0.10	ug/L
Aroclor 1016 (1) [2C]	ND	0.10	ug/L
Aroclor 1016 (2)	ND	0.10	ug/L
Aroclor 1016 (2) [2C]	ND	0.10	ug/L
Aroclor 1016 (3)	ND	0.10	ug/L
Aroclor 1016 (3) [2C]	ND	0.10	ug/L
Aroclor 1016 (4)	ND	0.10	ug/L
Aroclor 1016 (4) [2C]	ND	0.10	ug/L
Aroclor 1016 (5)	ND	0.10	ug/L
Aroclor 1016 (5) [2C]	ND	0.10	ug/L
Aroclor 1221	ND	0.10	ug/L
Aroclor 1221 (1)	ND	0.10	ug/L
Aroclor 1221 (1) [2C]	ND	0.10	ug/L
Aroclor 1221 (2)	ND	0.10	ug/L
Aroclor 1221 (2) [2C]	ND	0.10	ug/L
Aroclor 1221 (3)	ND	0.10	ug/L
Aroclor 1221 (3) [2C]	ND	0.10	ug/L
Aroclor 1221 (4)	ND	0.10	ug/L
Aroclor 1221 (4) [2C]	ND	0.10	ug/L
Aroclor 1221 (5)	ND	0.10	ug/L
Aroclor 1221 (5) [2C]	ND	0.10	ug/L
Aroclor 1232	ND	0.10	ug/L
Aroclor 1232 (1)	ND	0.10	ug/L
Aroclor 1232 (1) [2C]	ND	0.10	ug/L
Aroclor 1232 (2)	ND	0.10	ug/L
Aroclor 1232 (2) [2C]	ND	0.10	ug/L
Aroclor 1232 (3)	ND	0.10	ug/L
Aroclor 1232 (3) [2C]	ND	0.10	ug/L
Aroclor 1232 (4)	ND	0.10	ug/L
Aroclor 1232 (4) [2C]	ND	0.10	ug/L
Aroclor 1232 (5)	ND	0.10	ug/L
Aroclor 1232 (5) [2C]	ND	0.10	ug/L
Aroclor 1242	ND	0.10	ug/L
Aroclor 1242 (1)	ND	0.10	ug/L
Aroclor 1242 (1) [2C]	ND	0.10	ug/L
Aroclor 1242 (2)	ND	0.10	ug/L
Aroclor 1242 (2) [2C]	ND	0.10	ug/L
Aroclor 1242 (3)	ND	0.10	ug/L
Aroclor 1242 (3) [2C]	ND	0.10	ug/L
Aroclor 1242 (4)	ND	0.10	ug/L
Aroclor 1242 (4) [2C]	ND	0.10	ug/L
Aroclor 1242 (5)	ND	0.10	ug/L
Aroclor 1242 (5) [2C]	ND	0.10	ug/L



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1305405

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8082A Polychlorinated Biphenyls (PCB)

Batch CE32304 - 3510C

Aroclor 1248	ND	0.10	ug/L							
Aroclor 1248 (1)	ND	0.10	ug/L							
Aroclor 1248 (1) [2C]	ND	0.10	ug/L							
Aroclor 1248 (2)	ND	0.10	ug/L							
Aroclor 1248 (2) [2C]	ND	0.10	ug/L							
Aroclor 1248 (3)	ND	0.10	ug/L							
Aroclor 1248 (3) [2C]	ND	0.10	ug/L							
Aroclor 1248 (4)	ND	0.10	ug/L							
Aroclor 1248 (4) [2C]	ND	0.10	ug/L							
Aroclor 1248 (5)	ND	0.10	ug/L							
Aroclor 1248 (5) [2C]	ND	0.10	ug/L							
Aroclor 1254	ND	0.10	ug/L							
Aroclor 1254 (1)	ND	0.10	ug/L							
Aroclor 1254 (1) [2C]	ND	0.10	ug/L							
Aroclor 1254 (2)	ND	0.10	ug/L							
Aroclor 1254 (2) [2C]	ND	0.10	ug/L							
Aroclor 1254 (3)	ND	0.10	ug/L							
Aroclor 1254 (3) [2C]	ND	0.10	ug/L							
Aroclor 1254 (4)	ND	0.10	ug/L							
Aroclor 1254 (4) [2C]	ND	0.10	ug/L							
Aroclor 1254 (5)	ND	0.10	ug/L							
Aroclor 1254 (5) [2C]	ND	0.10	ug/L							
Aroclor 1260	ND	0.10	ug/L							
Aroclor 1260 (1)	ND	0.10	ug/L							
Aroclor 1260 (1) [2C]	ND	0.10	ug/L							
Aroclor 1260 (2)	ND	0.10	ug/L							
Aroclor 1260 (2) [2C]	ND	0.10	ug/L							
Aroclor 1260 (3)	ND	0.10	ug/L							
Aroclor 1260 (3) [2C]	ND	0.10	ug/L							
Aroclor 1260 (4)	ND	0.10	ug/L							
Aroclor 1260 (4) [2C]	ND	0.10	ug/L							
Aroclor 1260 (5)	ND	0.10	ug/L							
Aroclor 1260 (5) [2C]	ND	0.10	ug/L							
Aroclor 1262	ND	0.10	ug/L							
Aroclor 1262 (1)	ND	0.10	ug/L							
Aroclor 1262 (1) [2C]	ND	0.10	ug/L							
Aroclor 1262 (2)	ND	0.10	ug/L							
Aroclor 1262 (2) [2C]	ND	0.10	ug/L							
Aroclor 1262 (3)	ND	0.10	ug/L							
Aroclor 1262 (3) [2C]	ND	0.10	ug/L							
Aroclor 1262 (4)	ND	0.10	ug/L							
Aroclor 1262 (4) [2C]	ND	0.10	ug/L							
Aroclor 1262 (5)	ND	0.10	ug/L							
Aroclor 1262 (5) [2C]	ND	0.10	ug/L							
Aroclor 1268	ND	0.10	ug/L							



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1305405

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8082A Polychlorinated Biphenyls (PCB)

Batch CE32304 - 3510C

Aroclor 1268 (1)	ND	0.10	ug/L
Aroclor 1268 (1) [2C]	ND	0.10	ug/L
Aroclor 1268 (2)	ND	0.10	ug/L
Aroclor 1268 (2) [2C]	ND	0.10	ug/L
Aroclor 1268 (3)	ND	0.10	ug/L
Aroclor 1268 (3) [2C]	ND	0.10	ug/L
Aroclor 1268 (4)	ND	0.10	ug/L
Aroclor 1268 (4) [2C]	ND	0.10	ug/L
Aroclor 1268 (5)	ND	0.10	ug/L
Aroclor 1268 (5) [2C]	ND	0.10	ug/L

Surrogate: Decachlorobiphenyl	0.0423	ug/L	0.05000	85	30-150
Surrogate: Decachlorobiphenyl [2C]	0.0417	ug/L	0.05000	83	30-150
Surrogate: Tetrachloro-m-xylene	0.0295	ug/L	0.05000	59	30-150
Surrogate: Tetrachloro-m-xylene [2C]	0.0318	ug/L	0.05000	64	30-150

LCS						
Aroclor 1016	0.63	0.10	ug/L	1.000	63	40-140
Aroclor 1260	0.76	0.10	ug/L	1.000	76	40-140

Surrogate: Decachlorobiphenyl	0.0412	ug/L	0.05000	82	30-150
Surrogate: Decachlorobiphenyl [2C]	0.0407	ug/L	0.05000	81	30-150
Surrogate: Tetrachloro-m-xylene	0.0249	ug/L	0.05000	50	30-150
Surrogate: Tetrachloro-m-xylene [2C]	0.0241	ug/L	0.05000	48	30-150

LCS Dup						
Aroclor 1016	0.77	0.10	ug/L	1.000	77	40-140
Aroclor 1260	0.88	0.10	ug/L	1.000	88	40-140

Surrogate: Decachlorobiphenyl	0.0452	ug/L	0.05000	90	30-150
Surrogate: Decachlorobiphenyl [2C]	0.0445	ug/L	0.05000	89	30-150
Surrogate: Tetrachloro-m-xylene	0.0287	ug/L	0.05000	57	30-150
Surrogate: Tetrachloro-m-xylene [2C]	0.0283	ug/L	0.05000	57	30-150

Batch CE32829 - 3510C

Blank						
Aroclor 1016	ND	0.10	ug/L			
Aroclor 1016 (1)	ND	0.10	ug/L			
Aroclor 1016 (1) [2C]	ND	0.10	ug/L			
Aroclor 1016 (2)	ND	0.10	ug/L			
Aroclor 1016 (2) [2C]	ND	0.10	ug/L			
Aroclor 1016 (3)	ND	0.10	ug/L			
Aroclor 1016 (3) [2C]	ND	0.10	ug/L			
Aroclor 1016 (4)	ND	0.10	ug/L			
Aroclor 1016 (4) [2C]	ND	0.10	ug/L			
Aroclor 1016 (5)	ND	0.10	ug/L			
Aroclor 1016 (5) [2C]	ND	0.10	ug/L			
Aroclor 1221	ND	0.10	ug/L			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1305405

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Qualifier
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8082A Polychlorinated Biphenyls (PCB)

Batch CE32829 - 3510C

Aroclor 1221 (1)	ND	0.10	ug/L
Aroclor 1221 (1) [2C]	ND	0.10	ug/L
Aroclor 1221 (2)	ND	0.10	ug/L
Aroclor 1221 (2) [2C]	ND	0.10	ug/L
Aroclor 1221 (3)	ND	0.10	ug/L
Aroclor 1221 (3) [2C]	ND	0.10	ug/L
Aroclor 1221 (4)	ND	0.10	ug/L
Aroclor 1221 (4) [2C]	ND	0.10	ug/L
Aroclor 1221 (5)	ND	0.10	ug/L
Aroclor 1221 (5) [2C]	ND	0.10	ug/L
Aroclor 1232	ND	0.10	ug/L
Aroclor 1232 (1)	ND	0.10	ug/L
Aroclor 1232 (1) [2C]	ND	0.10	ug/L
Aroclor 1232 (2)	ND	0.10	ug/L
Aroclor 1232 (2) [2C]	ND	0.10	ug/L
Aroclor 1232 (3)	ND	0.10	ug/L
Aroclor 1232 (3) [2C]	ND	0.10	ug/L
Aroclor 1232 (4)	ND	0.10	ug/L
Aroclor 1232 (4) [2C]	ND	0.10	ug/L
Aroclor 1232 (5)	ND	0.10	ug/L
Aroclor 1232 (5) [2C]	ND	0.10	ug/L
Aroclor 1242	ND	0.10	ug/L
Aroclor 1242 (1)	ND	0.10	ug/L
Aroclor 1242 (1) [2C]	ND	0.10	ug/L
Aroclor 1242 (2)	ND	0.10	ug/L
Aroclor 1242 (2) [2C]	ND	0.10	ug/L
Aroclor 1242 (3)	ND	0.10	ug/L
Aroclor 1242 (3) [2C]	ND	0.10	ug/L
Aroclor 1242 (4)	ND	0.10	ug/L
Aroclor 1242 (4) [2C]	ND	0.10	ug/L
Aroclor 1242 (5)	ND	0.10	ug/L
Aroclor 1242 (5) [2C]	ND	0.10	ug/L
Aroclor 1248	ND	0.10	ug/L
Aroclor 1248 (1)	ND	0.10	ug/L
Aroclor 1248 (1) [2C]	ND	0.10	ug/L
Aroclor 1248 (2)	ND	0.10	ug/L
Aroclor 1248 (2) [2C]	ND	0.10	ug/L
Aroclor 1248 (3)	ND	0.10	ug/L
Aroclor 1248 (3) [2C]	ND	0.10	ug/L
Aroclor 1248 (4)	ND	0.10	ug/L
Aroclor 1248 (4) [2C]	ND	0.10	ug/L
Aroclor 1248 (5)	ND	0.10	ug/L
Aroclor 1248 (5) [2C]	ND	0.10	ug/L
Aroclor 1254	ND	0.10	ug/L
Aroclor 1254 (1)	ND	0.10	ug/L



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1305405

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8082A Polychlorinated Biphenyls (PCB)

Batch CE32829 - 3510C

Aroclor 1254 (1) [2C]	ND	0.10	ug/L							
Aroclor 1254 (2)	ND	0.10	ug/L							
Aroclor 1254 (2) [2C]	ND	0.10	ug/L							
Aroclor 1254 (3)	ND	0.10	ug/L							
Aroclor 1254 (3) [2C]	ND	0.10	ug/L							
Aroclor 1254 (4)	ND	0.10	ug/L							
Aroclor 1254 (4) [2C]	ND	0.10	ug/L							
Aroclor 1254 (5)	ND	0.10	ug/L							
Aroclor 1254 (5) [2C]	ND	0.10	ug/L							
Aroclor 1260	ND	0.10	ug/L							
Aroclor 1260 (1)	ND	0.10	ug/L							
Aroclor 1260 (1) [2C]	ND	0.10	ug/L							
Aroclor 1260 (2)	ND	0.10	ug/L							
Aroclor 1260 (2) [2C]	ND	0.10	ug/L							
Aroclor 1260 (3)	ND	0.10	ug/L							
Aroclor 1260 (3) [2C]	ND	0.10	ug/L							
Aroclor 1260 (4)	ND	0.10	ug/L							
Aroclor 1260 (4) [2C]	ND	0.10	ug/L							
Aroclor 1260 (5)	ND	0.10	ug/L							
Aroclor 1260 (5) [2C]	ND	0.10	ug/L							
Aroclor 1262	ND	0.10	ug/L							
Aroclor 1262 (1)	ND	0.10	ug/L							
Aroclor 1262 (1) [2C]	ND	0.10	ug/L							
Aroclor 1262 (2)	ND	0.10	ug/L							
Aroclor 1262 (2) [2C]	ND	0.10	ug/L							
Aroclor 1262 (3)	ND	0.10	ug/L							
Aroclor 1262 (3) [2C]	ND	0.10	ug/L							
Aroclor 1262 (4)	ND	0.10	ug/L							
Aroclor 1262 (4) [2C]	ND	0.10	ug/L							
Aroclor 1262 (5)	ND	0.10	ug/L							
Aroclor 1262 (5) [2C]	ND	0.10	ug/L							
Aroclor 1268	ND	0.10	ug/L							
Aroclor 1268 (1)	ND	0.10	ug/L							
Aroclor 1268 (1) [2C]	ND	0.10	ug/L							
Aroclor 1268 (2)	ND	0.10	ug/L							
Aroclor 1268 (2) [2C]	ND	0.10	ug/L							
Aroclor 1268 (3)	ND	0.10	ug/L							
Aroclor 1268 (3) [2C]	ND	0.10	ug/L							
Aroclor 1268 (4)	ND	0.10	ug/L							
Aroclor 1268 (4) [2C]	ND	0.10	ug/L							
Aroclor 1268 (5)	ND	0.10	ug/L							
Aroclor 1268 (5) [2C]	ND	0.10	ug/L							

Surrogate: Decachlorobiphenyl	0.0265	ug/L	0.05000	53	30-150
Surrogate: Decachlorobiphenyl [2C]	0.0294	ug/L	0.05000	59	30-150
Surrogate: Tetrachloro-m-xylene	0.0210	ug/L	0.05000	42	30-150



CERTIFICATE OF ANALYSIS

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8082A Polychlorinated Biphenyls (PCB)

Batch CE32829 - 3510C

Surrogate: Tetrachloro-m-xylene [2C]	0.0228		ug/L	0.05000	46	30-150
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LCS

Aroclor 1016	0.53	0.10	ug/L	1.000	53	40-140
Aroclor 1260	0.62	0.10	ug/L	1.000	62	40-140

Surrogate: Decachlorobiphenyl

0.0326 ug/L 0.05000 65 30-150

Surrogate: Decachlorobiphenyl [2C]

0.0338 ug/L 0.05000 68 30-150

Surrogate: Tetrachloro-m-xylene

0.0193 ug/L 0.05000 39 30-150

Surrogate: Tetrachloro-m-xylene [2C]

0.0202 ug/L 0.05000 40 30-150

LCS Dup

Aroclor 1016	0.60	0.10	ug/L	1.000	60	40-140	11	20
Aroclor 1260	0.66	0.10	ug/L	1.000	66	40-140	7	20

Surrogate: Decachlorobiphenyl

0.0334 ug/L 0.05000 67 30-150

Surrogate: Decachlorobiphenyl [2C]

0.0350 ug/L 0.05000 70 30-150

Surrogate: Tetrachloro-m-xylene

0.0210 ug/L 0.05000 42 30-150

Surrogate: Tetrachloro-m-xylene [2C]

0.0211 ug/L 0.05000 42 30-150

8260B Volatile Organic Compounds

Batch CE32132 - 5030B

Blank

1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,1-Dichloropropene	ND	2.0	ug/L
1,2,3-Trichlorobenzene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
1,2,4-Trichlorobenzene	ND	1.0	ug/L
1,2,4-Trimethylbenzene	ND	1.0	ug/L
1,2-Dibromo-3-Chloropropane	ND	5.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L
1,3,5-Trimethylbenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichloropropane	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,4-Dioxane - Screen	ND	500	ug/L
2,2-Dichloropropane	ND	1.0	ug/L
2-Butanone	ND	10.0	ug/L



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CE32132 - 5030B

2-Chlorotoluene	ND	1.0	ug/L
2-Hexanone	ND	10.0	ug/L
4-Chlorotoluene	ND	1.0	ug/L
4-Isopropyltoluene	ND	1.0	ug/L
4-Methyl-2-Pentanone	ND	10.0	ug/L
Acetone	ND	10.0	ug/L
Benzene	ND	1.0	ug/L
Bromobenzene	ND	2.0	ug/L
Bromochloromethane	ND	1.0	ug/L
Bromodichloromethane	ND	0.6	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon Disulfide	ND	1.0	ug/L
Carbon Tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	0.4	ug/L
Dibromochloromethane	ND	1.0	ug/L
Dibromomethane	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
Diethyl Ether	ND	1.0	ug/L
Di-isopropyl ether	ND	1.0	ug/L
Ethyl tertiary-butyl ether	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Hexachlorobutadiene	ND	0.6	ug/L
Hexachloroethane	ND	1.0	ug/L
Isopropylbenzene	ND	1.0	ug/L
Methyl tert-Butyl Ether	ND	1.0	ug/L
Methylene Chloride	ND	2.0	ug/L
Naphthalene	ND	1.0	ug/L
n-Butylbenzene	ND	1.0	ug/L
n-Propylbenzene	ND	1.0	ug/L
sec-Butylbenzene	ND	1.0	ug/L
Styrene	ND	1.0	ug/L
tert-Butylbenzene	ND	1.0	ug/L
Tertiary-amyl methyl ether	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Tetrahydrofuran	ND	5.0	ug/L
Toluene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	0.4	ug/L
Trichloroethene	ND	1.0	ug/L



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CE32132 - 5030B

Trichlorofluoromethane	ND	1.0	ug/L							
Vinyl Chloride	ND	1.0	ug/L							
Xylene O	ND	1.0	ug/L							
Xylene P,M	ND	2.0	ug/L							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	25.3		ug/L	25.00		101	70-130			
<i>Surrogate: 4-Bromofluorobenzene</i>	26.2		ug/L	25.00		105	70-130			
<i>Surrogate: Dibromofluoromethane</i>	24.9		ug/L	25.00		100	70-130			
<i>Surrogate: Toluene-d8</i>	24.4		ug/L	25.00		97	70-130			

LCS

1,1,1,2-Tetrachloroethane	9.6		ug/L	10.00		96	70-130			
1,1,1-Trichloroethane	10.1		ug/L	10.00		101	70-130			
1,1,2,2-Tetrachloroethane	8.8		ug/L	10.00		88	70-130			
1,1,2-Trichloroethane	9.2		ug/L	10.00		92	70-130			
1,1-Dichloroethane	9.5		ug/L	10.00		95	70-130			
1,1-Dichloroethene	10.4		ug/L	10.00		104	70-130			
1,1-Dichloropropene	11.1		ug/L	10.00		111	70-130			
1,2,3-Trichlorobenzene	10.5		ug/L	10.00		105	70-130			
1,2,3-Trichloropropane	8.5		ug/L	10.00		85	70-130			
1,2,4-Trichlorobenzene	9.8		ug/L	10.00		98	70-130			
1,2,4-Trimethylbenzene	9.6		ug/L	10.00		96	70-130			
1,2-Dibromo-3-Chloropropane	8.0		ug/L	10.00		80	70-130			
1,2-Dibromoethane	9.3		ug/L	10.00		93	70-130			
1,2-Dichlorobenzene	9.6		ug/L	10.00		96	70-130			
1,2-Dichloroethane	10.7		ug/L	10.00		107	70-130			
1,2-Dichloropropane	8.7		ug/L	10.00		87	70-130			
1,3,5-Trimethylbenzene	9.9		ug/L	10.00		99	70-130			
1,3-Dichlorobenzene	9.2		ug/L	10.00		92	70-130			
1,3-Dichloropropane	10.4		ug/L	10.00		104	70-130			
1,4-Dichlorobenzene	9.8		ug/L	10.00		98	70-130			
1,4-Dioxane - Screen	172		ug/L	200.0		86	0-332			
2,2-Dichloropropane	10.4		ug/L	10.00		104	70-130			
2-Butanone	44.4		ug/L	50.00		89	70-130			
2-Chlorotoluene	8.8		ug/L	10.00		88	70-130			
2-Hexanone	45.6		ug/L	50.00		91	70-130			
4-Chlorotoluene	8.3		ug/L	10.00		83	70-130			
4-Isopropyltoluene	8.8		ug/L	10.00		88	70-130			
4-Methyl-2-Pentanone	47.4		ug/L	50.00		95	70-130			
Acetone	43.1		ug/L	50.00		86	70-130			
Benzene	8.9		ug/L	10.00		89	70-130			
Bromobenzene	9.5		ug/L	10.00		95	70-130			
Bromochloromethane	9.6		ug/L	10.00		96	70-130			
Bromodichloromethane	9.8		ug/L	10.00		98	70-130			
Bromoform	9.0		ug/L	10.00		90	70-130			
Bromomethane	12.2		ug/L	10.00		122	70-130			
Carbon Disulfide	10.2		ug/L	10.00		102	70-130			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CE32132 - 5030B

Carbon Tetrachloride	9.2		ug/L	10.00	92	70-130				
Chlorobenzene	9.5		ug/L	10.00	95	70-130				
Chloroethane	9.9		ug/L	10.00	99	70-130				
Chloroform	10.1		ug/L	10.00	101	70-130				
Chloromethane	8.6		ug/L	10.00	86	70-130				
cis-1,2-Dichloroethene	10.4		ug/L	10.00	104	70-130				
cis-1,3-Dichloropropene	9.5		ug/L	10.00	95	70-130				
Dibromochloromethane	9.8		ug/L	10.00	98	70-130				
Dibromomethane	9.7		ug/L	10.00	97	70-130				
Dichlorodifluoromethane	10.0		ug/L	10.00	100	70-130				
Diethyl Ether	8.3		ug/L	10.00	83	70-130				
Di-isopropyl ether	8.8		ug/L	10.00	88	70-130				
Ethyl tertiary-butyl ether	9.8		ug/L	10.00	98	70-130				
Ethylbenzene	9.8		ug/L	10.00	98	70-130				
Hexachlorobutadiene	11.1		ug/L	10.00	111	70-130				
Hexachloroethane	9.1		ug/L	10.00	91	70-130				
Isopropylbenzene	8.9		ug/L	10.00	89	70-130				
Methyl tert-Butyl Ether	9.9		ug/L	10.00	99	70-130				
Methylene Chloride	9.1		ug/L	10.00	91	70-130				
Naphthalene	8.8		ug/L	10.00	88	70-130				
n-Butylbenzene	9.7		ug/L	10.00	97	70-130				
n-Propylbenzene	8.7		ug/L	10.00	87	70-130				
sec-Butylbenzene	9.5		ug/L	10.00	95	70-130				
Styrene	10.0		ug/L	10.00	100	70-130				
tert-Butylbenzene	8.6		ug/L	10.00	86	70-130				
Tertiary-amyl methyl ether	8.8		ug/L	10.00	88	70-130				
Tetrachloroethene	11.0		ug/L	10.00	110	70-130				
Tetrahydrofuran	9.0		ug/L	10.00	90	70-130				
Toluene	9.7		ug/L	10.00	97	70-130				
trans-1,2-Dichloroethene	10.5		ug/L	10.00	105	70-130				
trans-1,3-Dichloropropene	9.1		ug/L	10.00	91	70-130				
Trichloroethene	10.4		ug/L	10.00	104	70-130				
Trichlorofluoromethane	7.6		ug/L	10.00	76	70-130				
Vinyl Chloride	9.8		ug/L	10.00	98	70-130				
Xylene O	9.5		ug/L	10.00	95	70-130				
Xylene P,M	18.6		ug/L	20.00	93	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	27.2		ug/L	25.00	109	70-130				
<i>Surrogate: 4-Bromofluorobenzene</i>	26.3		ug/L	25.00	105	70-130				
<i>Surrogate: Dibromofluoromethane</i>	27.6		ug/L	25.00	111	70-130				
<i>Surrogate: Toluene-d8</i>	24.4		ug/L	25.00	98	70-130				

LCS Dup

1,1,1,2-Tetrachloroethane	9.5		ug/L	10.00	95	70-130	2	25		
1,1,1-Trichloroethane	9.7		ug/L	10.00	97	70-130	4	25		
1,1,2,2-Tetrachloroethane	8.7		ug/L	10.00	87	70-130	0.8	25		
1,1,2-Trichloroethane	9.1		ug/L	10.00	91	70-130	2	25		



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CE32132 - 5030B

1,1-Dichloroethane	9.2		ug/L	10.00	92	70-130	3	25		
1,1-Dichloroethene	10.4		ug/L	10.00	104	70-130	0.4	25		
1,1-Dichloropropene	10.8		ug/L	10.00	108	70-130	3	25		
1,2,3-Trichlorobenzene	9.4		ug/L	10.00	94	70-130	11	25		
1,2,3-Trichloropropane	8.5		ug/L	10.00	85	70-130	0.2	25		
1,2,4-Trichlorobenzene	9.7		ug/L	10.00	97	70-130	0.3	25		
1,2,4-Trimethylbenzene	9.6		ug/L	10.00	96	70-130	0.3	25		
1,2-Dibromo-3-Chloropropane	8.2		ug/L	10.00	82	70-130	2	25		
1,2-Dibromoethane	9.8		ug/L	10.00	98	70-130	5	25		
1,2-Dichlorobenzene	9.0		ug/L	10.00	90	70-130	6	25		
1,2-Dichloroethane	10.3		ug/L	10.00	103	70-130	4	25		
1,2-Dichloropropane	9.0		ug/L	10.00	90	70-130	3	25		
1,3,5-Trimethylbenzene	9.5		ug/L	10.00	95	70-130	4	25		
1,3-Dichlorobenzene	9.2		ug/L	10.00	92	70-130	0.7	25		
1,3-Dichloropropane	10.4		ug/L	10.00	104	70-130	0.3	25		
1,4-Dichlorobenzene	9.4		ug/L	10.00	94	70-130	4	25		
1,4-Dioxane - Screen	178		ug/L	200.0	89	0-332	3	200		
2,2-Dichloropropane	9.4		ug/L	10.00	94	70-130	10	25		
2-Butanone	43.4		ug/L	50.00	87	70-130	2	25		
2-Chlorotoluene	8.9		ug/L	10.00	89	70-130	0.3	25		
2-Hexanone	45.2		ug/L	50.00	90	70-130	0.9	25		
4-Chlorotoluene	8.3		ug/L	10.00	83	70-130	0.1	25		
4-Isopropyltoluene	8.5		ug/L	10.00	85	70-130	4	25		
4-Methyl-2-Pentanone	44.2		ug/L	50.00	88	70-130	7	25		
Acetone	42.5		ug/L	50.00	85	70-130	2	25		
Benzene	8.8		ug/L	10.00	88	70-130	1	25		
Bromobenzene	9.3		ug/L	10.00	93	70-130	2	25		
Bromochloromethane	9.6		ug/L	10.00	96	70-130	0.3	25		
Bromodichloromethane	9.7		ug/L	10.00	97	70-130	2	25		
Bromoform	8.9		ug/L	10.00	89	70-130	0.7	25		
Bromomethane	10.7		ug/L	10.00	107	70-130	13	25		
Carbon Disulfide	10.0		ug/L	10.00	100	70-130	2	25		
Carbon Tetrachloride	9.4		ug/L	10.00	94	70-130	3	25		
Chlorobenzene	9.3		ug/L	10.00	93	70-130	3	25		
Chloroethane	9.7		ug/L	10.00	97	70-130	1	25		
Chloroform	9.7		ug/L	10.00	97	70-130	4	25		
Chloromethane	8.1		ug/L	10.00	81	70-130	6	25		
cis-1,2-Dichloroethene	9.9		ug/L	10.00	99	70-130	5	25		
cis-1,3-Dichloropropene	9.7		ug/L	10.00	97	70-130	2	25		
Dibromochloromethane	9.8		ug/L	10.00	98	70-130	0.2	25		
Dibromomethane	9.4		ug/L	10.00	94	70-130	4	25		
Dichlorodifluoromethane	9.6		ug/L	10.00	96	70-130	3	25		
Diethyl Ether	8.2		ug/L	10.00	82	70-130	1	25		
Di-isopropyl ether	8.6		ug/L	10.00	86	70-130	2	25		
Ethyl tertiary-butyl ether	9.1		ug/L	10.00	91	70-130	7	25		



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1305405

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CE32132 - 5030B										
Ethylbenzene	9.9		ug/L	10.00	99	70-130	1	25		
Hexachlorobutadiene	10.2		ug/L	10.00	102	70-130	8	25		
Hexachloroethane	9.0		ug/L	10.00	90	70-130	1	25		
Isopropylbenzene	8.9		ug/L	10.00	89	70-130	0.1	25		
Methyl tert-Butyl Ether	9.2		ug/L	10.00	92	70-130	6	25		
Methylene Chloride	8.9		ug/L	10.00	89	70-130	2	25		
Naphthalene	8.5		ug/L	10.00	85	70-130	4	25		
n-Butylbenzene	9.2		ug/L	10.00	92	70-130	6	25		
n-Propylbenzene	8.4		ug/L	10.00	84	70-130	4	25		
sec-Butylbenzene	9.1		ug/L	10.00	91	70-130	4	25		
Styrene	10.2		ug/L	10.00	102	70-130	2	25		
tert-Butylbenzene	8.4		ug/L	10.00	84	70-130	3	25		
Tertiary-amyl methyl ether	8.5		ug/L	10.00	85	70-130	4	25		
Tetrachloroethene	11.1		ug/L	10.00	111	70-130	0.5	25		
Tetrahydrofuran	7.5		ug/L	10.00	75	70-130	18	25		
Toluene	9.4		ug/L	10.00	94	70-130	3	25		
trans-1,2-Dichloroethene	10.2		ug/L	10.00	102	70-130	3	25		
trans-1,3-Dichloropropene	8.5		ug/L	10.00	85	70-130	7	25		
Trichloroethene	9.8		ug/L	10.00	98	70-130	6	25		
Trichlorofluoromethane	7.7		ug/L	10.00	77	70-130	2	25		
Vinyl Chloride	9.4		ug/L	10.00	94	70-130	4	25		
Xylene O	9.6		ug/L	10.00	96	70-130	1	25		
Xylene P,M	19.1		ug/L	20.00	95	70-130	3	25		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	26.2		ug/L	25.00	105	70-130				
<i>Surrogate: 4-Bromofluorobenzene</i>	25.9		ug/L	25.00	104	70-130				
<i>Surrogate: Dibromofluoromethane</i>	26.4		ug/L	25.00	106	70-130				
<i>Surrogate: Toluene-d8</i>	25.0		ug/L	25.00	100	70-130				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1305405

Notes and Definitions

U	Analyte included in the analysis, but not detected
SM	Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).
P	Percent difference between primary and confirmation results exceeds 40% (P).
LC	Lower value is used due to matrix interferences (LC).
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Grant Gear

ESS Laboratory Work Order: 1305405

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)
A2LA Accredited: Testing Cert# 2864.01
<http://www.a2la.org/scopepdf/2864-01.pdf>

Rhode Island Potable and Non Potable Water: LAI00179
<http://www.health.ri.gov/labs/waterlabs-instate.php>

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI0002
http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-RI002
<http://public.dep.state.ma.us/labcert/labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
<http://www4.egov.nh.gov/des/nhelap/namesearch.asp>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/dep/DEP_OPRA/

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301
http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
<http://www.A2LA.org/dirsearchnew/newsearch.cfm>

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
<http://www.cpsc.gov/cgi-bin/labapplist.aspx>

Sample and Cooler Receipt Checklist

Client: GZA GeoEnvironmental, Inc.

Client Project ID:

Shipped/Delivered Via: ESS CourierESS Project ID: 13050405Date Project Due: 5/27/13Days For Project: 5 Day**Items to be checked upon receipt:**

1. Air Bill Manifest Present?

Air No.:

 * No

2. Were Custody Seals Present?

 Yes

3. Were Custody Seals Intact?

 Yes

4. Is Radiation count < 100 CPM?

 Yes

5. Is a cooler present?

 YesCooler Temp: 2.4Iced With: Ice

6. Was COC included with samples?

 Yes

7. Was COC signed and dated by client?

 Yes

8. Does the COC match the sample

 Yes

9. Is COC complete and correct?

 Yes10. Are the samples properly preserved? Yes11. Proper sample containers used? Yes12. Any air bubbles in the VOA vials? * Yes13. Holding times exceeded? No14. Sufficient sample volumes? Yes15. Any Subcontracting needed? No16. Are ESS labels on correct containers? Yes|No17. Were samples received intact? Yes|No

ESS Sample IDs: _____

Sub Lab: _____

Analysis: _____

TAT: _____

18. Was there need to call project manager to discuss status? If yes, please explain.

Who was called?: _____

By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	1 L Glass	1	NP
1	Yes	40 ml - VOA	3	HCL
2	Yes	1 L Glass	2	NP
2	Yes	40 ml - VOA	3	HCL
3	Yes	1 L Glass	2	NP
3	Yes	40 ml - VOA	3	HCL
4	Yes	1 L Glass	3	HCL
4	Yes	40 ml - VOA	1	NP
5	Yes	1 L Glass	3	HCL
5	Yes	40 ml - VOA	2	NP
6	Yes	1 L Glass	3	HCL
6	Yes	40 ml - VOA	2	NP
7	Yes	1 L Glass	3	HCL
7	Yes	40 ml - VOA	2	NP
8	Yes	1 L Glass	3	HCL
8	Yes	40 ml - VOA	1	HCL

Completed By: PCDate/Time: 5/20/13Reviewed By: SEPDate/Time: 5/20/13

EESST Laboratory

Division of Thielsch Engineering, Inc.

185 Frances Avenue, Cranston, RI 02910-2211

Tel. (401) 461-7181 Fax (401) 461-4486

www.esslaboratory.com

CHAIN OF CUSTODY

Turn Time	<input checked="" type="checkbox"/> Standard If faster than 5 days, prior approval by laboratory is required # _____	Other _____	Reporting Limits	ESS LAB PROJECT 1205405
State where samples were collected from:		MA RI CT NH NJ NY ME Other	Electronic Deliverable	Form# _____ Excl _____ No _____
Is this project for any of the following:		MA-MCP Nan	Form# _____ Excl _____ No _____	Form# _____ Excl _____ No _____

Co. Name	Project #		Project Name (20 Char. or less)		USACE	Other	Write Required Analysis	
	MA-MCP	Navy	Address	Fax #			Date	Collection Time
G2A	01.0018605.00	Grant Gear						
Contact Person Bill Davis	State	Zip	PO#					
City Norwood								
Telephone # 781-983-1357								
ESS LAB Sample #								
Number of Containers								
Type of Containers								
Price Code								
Comments: Samples were collected using low-flow methods								
Container Type: P-Poly G-Glass S-Sterile V-VOA		Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters		Preservation Code: 1-NP, 2- HCl, 3- H ₂ SO ₄ , 4- HNO ₃ , 5- NaOH, 6- MeOH, 7- Ascorbic Acid, 8- ZnAct, 9-				
Cooler Present Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Internal Use Only		Sampled by: Bill Davis					
Seals Intact Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Technicians <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>		Comments: Samples were collected using low-flow methods					
Cooler Temp: 2.4°C 5/16/13	Date/Time Received by: (Signature)	Date/Time Relinquished by: (Signature)	Date/Time Received by: (Signature)	Date/Time Relinquished by: (Signature)	Date/Time Received by: (Signature)	Date/Time Relinquished by: (Signature)	Date/Time Received by: (Signature)	Date/Time Relinquished by: (Signature)
Retriggered by: (Signature)	5/17/13 300pm	FRIDAY	5/20/13 13:20	FRIDAY	5/20/13 13:20	FRIDAY	5/20/13 13:20	FRIDAY
Retriggered by: (Signature)	Date/Time Received by: (Signature)	Date/Time Relinquished by: (Signature)	Date/Time Received by: (Signature)	Date/Time Relinquished by: (Signature)	Date/Time Received by: (Signature)	Date/Time Relinquished by: (Signature)	Date/Time Received by: (Signature)	Date/Time Relinquished by: (Signature)
B. Davis	5/20/13 16:00	ESS-SR Cooler	5/20/13 16:00	ESS-Cooler	5/20/13 20:35	ESS-Cooler	5/20/13 20:35	ESS-Cooler

By circling MA-MCP, client acknowledges samples were collected in accordance with MADEPCAM VII A

Please fax all changes to Chain of Custody in writing.
1 (White) Lab Copy 2 (Yellow) Client Receipt



CERTIFICATE OF ANALYSIS

Bill Davis
GZA GeoEnvironmental, Inc.
249 Vanderbilt Avenue
Norwood, MA 02062

RE: Grant Gear (01.0018605.00)
ESS Laboratory Work Order Number: 1311544

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED

By ESS Laboratory at 5:39 pm, Dec 06, 2013

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with NELAC Standards, A2LA and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1311544

SAMPLE RECEIPT

The following samples were received on November 27, 2013 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has performed and reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Data Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

For EPH soil samples, the aromatic range results have been corrected for identified cartridge contaminant in accordance with the CAM protocol.

Lab Number	Sample Name	Matrix	Analysis
1311544-01	MW-1A	Ground Water	8082A, 8260B
1311544-02	ME-10	Ground Water	8082A, 8260B
1311544-03	ME-17	Ground Water	8082A, 8260B
1311544-04	MW-EW-11	Ground Water	8082A, 8260B
1311544-05	B-28	Ground Water	8082A, 8260B
1311544-06	Duplicate	Ground Water	8082A, 8260B
1311544-07	MW-3AR	Ground Water	8082A, 8260B
1311544-08	Trip Blank	Aqueous	8260B



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1311544

PROJECT NARRATIVE

8082A Polychlorinated Biphenyls (PCB)

1311544-01

Percent difference between primary and confirmation results exceeds 40% (P).

Aroclor 1248

CL30208-BSD1

Relative percent difference for duplicate is outside of criteria (D+).

Aroclor 1016 (27%)

CL30431-BSD1

Relative percent difference for duplicate is outside of criteria (D+).

Aroclor 1016 (23%)

8260B Volatile Organic Compounds

CL30332-BSD1

Blank Spike recovery is above upper control limit (B+).

1,1-Dichloropropene (131% @ 70-130%)

CL30436-BS1

Blank Spike recovery is above upper control limit (B+).

Hexachlorobutadiene (136% @ 70-130%)

CWL0028-CCV1

Continuing Calibration recovery is above upper control limit (C+).

1,1-Dichloroethane (131% @ 70-130%), 1,4-Dioxane - Screen (151% @ 70-130%), Tetrahydrofuran (136% @ 70-130%)

CWL0046-CCV1

Continuing Calibration recovery is above upper control limit (C+).

Bromomethane (135% @ 70-130%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[Definitions of Quality Control Parameters](#)

[Semivolatile Organics Internal Standard Information](#)

[Semivolatile Organics Surrogate Information](#)

[Volatile Organics Internal Standard Information](#)

[Volatile Organics Surrogate Information](#)

[EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1311544

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5035 - Solid Purge and Trap



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Grant Gear

ESS Laboratory Work Order: 1311544

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1311544-01 through 1311544-08**

Matrices: Ground Water/Surface Water Soil/Sediment Drinking Water Air Other: _____

CAM Protocol (check all that apply below):

- | | | | | | |
|------------------------------|-------------------------------|-----------------------------|------------------------------------|--|-----------------------------|
| (X) 8260 VOC
CAM II A | () 7470/7471 Hg
CAM III B | () MassDEP VPH
CAM IV A | () 8081 Pesticides
CAM V B | () 7196 Hex Cr
CAM VI B | () MassDEP APH
CAM IX A |
| () 8270 SVOC
CAM II B | () 7010 Metals
CAM III C | () MassDEP EPH
CAM IV B | () 8151 Herbicides
CAM V C | () 8330 Explosives
CAM VIII A | () TO-15 VOC
CAM IX B |
| () 6010 Metals
CAM III A | () 6020 Metals
CAM III D | (X) 8082 PCB
CAM V A | () 6860 Perchlorate
CAM VIII B | () 9014 Total Cyanide/PAC
CAM VI A | |

Affirmative responses to questions A through F are required for Presumptive Certainty'status

- A Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? Yes (X) No ()
- B Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed? Yes (X) No ()
- C Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? Yes (X) No ()
- D Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? Yes (X) No ()
- E a. VPH, EPH, APH and TO-15 only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).
b. APH and TO-15 Methods only: Was the complete analyte list reported for each method? Yes () No ()
- F Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)? Yes (X) No ()

Responses to Questions G, H and I below are required for Presumptive Certainty'status

- G Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? Yes (X) No ()*
- Data User Note: Data that achieve Presumptive Certainty'status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40.1056 (2)(k) and WSC-07-350.**
- H Were all QC performance standards specified in the CAM protocol(s) achieved? Yes () No (X)*
- I Were results reported for the complete analyte list specified in the selected CAM protocol(s)? Yes (X) No ()*

*All negative responses must be addressed in an attached laboratory narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: _____

Printed Name: Laurel Stoddard

Date: December 06, 2013

Position: Laboratory Director



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: MW-1A

Date Sampled: 11/26/13 09:11

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-01

Sample Matrix: Ground Water

Units: ug/L

Analyst: TAJ

Prepared: 12/2/13 16:30

Cleanup Method: 3665A

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	12/02/13 21:38		CL30208
Aroclor 1221	ND (0.09)		8082A		1	12/02/13 21:38		CL30208
Aroclor 1232	ND (0.09)		8082A		1	12/02/13 21:38		CL30208
Aroclor 1242	ND (0.09)		8082A		1	12/02/13 21:38		CL30208
Aroclor 1248	P 0.39 (0.09)		8082A		1	12/02/13 21:38		CL30208
Aroclor 1254	0.41 (0.09)		8082A		1	12/02/13 21:38		CL30208
Aroclor 1260	ND (0.09)		8082A		1	12/02/13 21:38		CL30208
Aroclor 1262	ND (0.09)		8082A		1	12/02/13 21:38		CL30208
Aroclor 1268	ND (0.09)		8082A		1	12/02/13 21:38		CL30208

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	59 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	58 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	71 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	73 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: MW-1A

Date Sampled: 11/26/13 09:11

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-01

Sample Matrix: Ground Water

Units: ug/L

Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
1,1,1-Trichloroethane	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	12/04/13 20:22	CWL0046	CL30436
1,1,2-Trichloroethane	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
1,1-Dichloroethane	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
1,1-Dichloroethene	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
1,1-Dichloropropene	ND (2.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
1,2,3-Trichlorobenzene	12.2 (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
1,2,3-Trichloropropane	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
1,2,4-Trichlorobenzene	83.1 (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
1,2-Dibromoethane	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
1,2-Dichlorobenzene	5.0 (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
1,2-Dichloroethane	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
1,2-Dichloropropane	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
1,3-Dichlorobenzene	66.5 (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
1,3-Dichloropropane	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
1,4-Dichlorobenzene	72.4 (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
1,4-Dioxane - Screen	ND (500)		8260B		1	12/04/13 20:22	CWL0046	CL30436
2,2-Dichloropropane	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
2-Butanone	ND (10.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
2-Chlorotoluene	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
2-Hexanone	ND (10.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
4-Chlorotoluene	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
4-Isopropyltoluene	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Acetone	ND (10.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Benzene	1.1 (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Bromobenzene	ND (2.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: MW-1A

Date Sampled: 11/26/13 09:11

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-01

Sample Matrix: Ground Water

Units: ug/L

Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Bromodichloromethane	ND (0.6)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Bromoform	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Bromomethane	ND (2.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Carbon Disulfide	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Carbon Tetrachloride	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Chlorobenzene	620 (20.0)		8260B		20	12/04/13 17:23	CWL0046	CL30436
Chloroethane	ND (2.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Chloroform	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Chloromethane	ND (2.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
cis-1,2-Dichloroethene	30.2 (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Dibromochloromethane	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Dibromomethane	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Dichlorodifluoromethane	ND (2.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Diethyl Ether	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Di-isopropyl ether	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Ethylbenzene	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Hexachlorobutadiene	ND (0.6)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Hexachloroethane	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Isopropylbenzene	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Methylene Chloride	ND (2.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Naphthalene	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
n-Butylbenzene	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
n-Propylbenzene	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
sec-Butylbenzene	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Styrene	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
tert-Butylbenzene	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: MW-1A

Date Sampled: 11/26/13 09:11

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-01

Sample Matrix: Ground Water

Units: ug/L

Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrachloroethene	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Tetrahydrofuran	ND (5.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Toluene	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
trans-1,2-Dichloroethene	1.4 (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Trichloroethene	97.4 (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Trichlorofluoromethane	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Vinyl Chloride	10.7 (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Xylene O	ND (1.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Xylene P,M	ND (2.0)		8260B		1	12/04/13 20:22	CWL0046	CL30436
Xylenes (Total)	ND (2.0)		8260B		1	12/04/13 20:22		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	96 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	92 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	89 %		70-130
<i>Surrogate: Toluene-d8</i>	90 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: ME-10

Date Sampled: 11/26/13 12:15

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-02

Sample Matrix: Ground Water

Units: ug/L

Analyst: TAJ

Prepared: 12/2/13 16:30

Cleanup Method: 3665A

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	12/02/13 21:56		CL30208
Aroclor 1221	ND (0.09)		8082A		1	12/02/13 21:56		CL30208
Aroclor 1232	ND (0.09)		8082A		1	12/02/13 21:56		CL30208
Aroclor 1242	ND (0.09)		8082A		1	12/02/13 21:56		CL30208
Aroclor 1248	ND (0.09)		8082A		1	12/02/13 21:56		CL30208
Aroclor 1254	0.71 (0.09)		8082A		1	12/02/13 21:56		CL30208
Aroclor 1260	ND (0.09)		8082A		1	12/02/13 21:56		CL30208
Aroclor 1262	ND (0.09)		8082A		1	12/02/13 21:56		CL30208
Aroclor 1268	ND (0.09)		8082A		1	12/02/13 21:56		CL30208

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	55 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	54 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	64 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	87 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: ME-10

Date Sampled: 11/26/13 12:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-02

Sample Matrix: Ground Water

Units: ug/L

Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
1,1,1-Trichloroethane	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	12/04/13 13:49	CWL0046	CL30436
1,1,2-Trichloroethane	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
1,1-Dichloroethane	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
1,1-Dichloroethene	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
1,1-Dichloropropene	ND (2.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
1,2,3-Trichloropropane	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
1,2,4-Trichlorobenzene	1.2 (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
1,2-Dibromoethane	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
1,2-Dichlorobenzene	3.8 (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
1,2-Dichloroethane	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
1,2-Dichloropropane	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
1,3-Dichlorobenzene	1.9 (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
1,3-Dichloropropane	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
1,4-Dichlorobenzene	5.0 (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
1,4-Dioxane - Screen	ND (500)		8260B		1	12/04/13 13:49	CWL0046	CL30436
2,2-Dichloropropane	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
2-Butanone	ND (10.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
2-Chlorotoluene	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
2-Hexanone	ND (10.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
4-Chlorotoluene	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
4-Isopropyltoluene	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Acetone	ND (10.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Benzene	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Bromobenzene	ND (2.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: ME-10

Date Sampled: 11/26/13 12:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-02

Sample Matrix: Ground Water

Units: ug/L

Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Bromodichloromethane	ND (0.6)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Bromoform	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Bromomethane	ND (2.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Carbon Disulfide	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Carbon Tetrachloride	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Chlorobenzene	8.8 (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Chloroethane	ND (2.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Chloroform	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Chloromethane	ND (2.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
cis-1,2-Dichloroethene	2.7 (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Dibromochloromethane	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Dibromomethane	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Dichlorodifluoromethane	ND (2.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Diethyl Ether	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Di-isopropyl ether	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Ethylbenzene	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Hexachlorobutadiene	ND (0.6)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Hexachloroethane	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Isopropylbenzene	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Methylene Chloride	ND (2.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Naphthalene	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
n-Butylbenzene	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
n-Propylbenzene	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
sec-Butylbenzene	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Styrene	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
tert-Butylbenzene	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: ME-10

Date Sampled: 11/26/13 12:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-02

Sample Matrix: Ground Water

Units: ug/L

Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrachloroethene	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Tetrahydrofuran	ND (5.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Toluene	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Trichloroethene	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Trichlorofluoromethane	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Vinyl Chloride	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Xylene O	ND (1.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Xylene P,M	ND (2.0)		8260B		1	12/04/13 13:49	CWL0046	CL30436
Xylenes (Total)	ND (2.0)		8260B		1	12/04/13 13:49		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	95 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	92 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	87 %		70-130
<i>Surrogate: Toluene-d8</i>	93 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: ME-17

Date Sampled: 11/26/13 10:45

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-03

Sample Matrix: Ground Water

Units: ug/L

Analyst: TAJ

Prepared: 12/2/13 16:30

Cleanup Method: 3665A

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	12/03/13 18:43		CL30431
Aroclor 1221	ND (0.09)		8082A		1	12/03/13 18:43		CL30431
Aroclor 1232	ND (0.09)		8082A		1	12/03/13 18:43		CL30431
Aroclor 1242	ND (0.09)		8082A		1	12/03/13 18:43		CL30431
Aroclor 1248	0.41 (0.09)		8082A		1	12/03/13 18:43		CL30431
Aroclor 1254	0.36 (0.09)		8082A		1	12/03/13 18:43		CL30431
Aroclor 1260	ND (0.09)		8082A		1	12/03/13 18:43		CL30431
Aroclor 1262	ND (0.09)		8082A		1	12/03/13 18:43		CL30431
Aroclor 1268	ND (0.09)		8082A		1	12/03/13 18:43		CL30431

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	66 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	64 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	100 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	92 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: ME-17

Date Sampled: 11/26/13 10:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-03

Sample Matrix: Ground Water

Units: ug/L

Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
1,1,1-Trichloroethane	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	12/04/13 14:24	CWL0046	CL30436
1,1,2-Trichloroethane	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
1,1-Dichloroethane	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
1,1-Dichloroethene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
1,1-Dichloropropene	ND (2.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
1,2,3-Trichloropropane	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
1,2-Dibromoethane	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
1,2-Dichlorobenzene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
1,2-Dichloroethane	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
1,2-Dichloropropane	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
1,3-Dichlorobenzene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
1,3-Dichloropropane	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
1,4-Dichlorobenzene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
1,4-Dioxane - Screen	ND (500)		8260B		1	12/04/13 14:24	CWL0046	CL30436
2,2-Dichloropropane	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
2-Butanone	ND (10.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
2-Chlorotoluene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
2-Hexanone	ND (10.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
4-Chlorotoluene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
4-Isopropyltoluene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Acetone	ND (10.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Benzene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Bromobenzene	ND (2.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: ME-17

Date Sampled: 11/26/13 10:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-03

Sample Matrix: Ground Water

Units: ug/L

Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Bromodichloromethane	ND (0.6)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Bromoform	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Bromomethane	ND (2.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Carbon Disulfide	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Carbon Tetrachloride	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Chlorobenzene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Chloroethane	ND (2.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Chloroform	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Chloromethane	ND (2.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Dibromochloromethane	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Dibromomethane	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Dichlorodifluoromethane	ND (2.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Diethyl Ether	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Di-isopropyl ether	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Ethylbenzene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Hexachlorobutadiene	ND (0.6)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Hexachloroethane	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Isopropylbenzene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Methylene Chloride	ND (2.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Naphthalene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
n-Butylbenzene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
n-Propylbenzene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
sec-Butylbenzene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Styrene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
tert-Butylbenzene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: ME-17

Date Sampled: 11/26/13 10:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-03

Sample Matrix: Ground Water

Units: ug/L

Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrachloroethene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Tetrahydrofuran	ND (5.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Toluene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Trichloroethene	1.2 (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Trichlorofluoromethane	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Vinyl Chloride	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Xylene O	ND (1.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Xylene P,M	ND (2.0)		8260B		1	12/04/13 14:24	CWL0046	CL30436
Xylenes (Total)	ND (2.0)		8260B		1	12/04/13 14:24		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	98 %		70-130
Surrogate: 4-Bromofluorobenzene	91 %		70-130
Surrogate: Dibromofluoromethane	91 %		70-130
Surrogate: Toluene-d8	94 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: MW-EW-11

Date Sampled: 11/26/13 11:30

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-04

Sample Matrix: Ground Water

Units: ug/L

Analyst: TAJ

Prepared: 12/2/13 16:30

Cleanup Method: 3665A

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	12/02/13 22:34		CL30208
Aroclor 1221	ND (0.09)		8082A		1	12/02/13 22:34		CL30208
Aroclor 1232	ND (0.09)		8082A		1	12/02/13 22:34		CL30208
Aroclor 1242	ND (0.09)		8082A		1	12/02/13 22:34		CL30208
Aroclor 1248	ND (0.09)		8082A		1	12/02/13 22:34		CL30208
Aroclor 1254	ND (0.09)		8082A		1	12/02/13 22:34		CL30208
Aroclor 1260	ND (0.09)		8082A		1	12/02/13 22:34		CL30208
Aroclor 1262	ND (0.09)		8082A		1	12/02/13 22:34		CL30208
Aroclor 1268	ND (0.09)		8082A		1	12/02/13 22:34		CL30208

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	79 %		30-150
Surrogate: Decachlorobiphenyl [2C]	78 %		30-150
Surrogate: Tetrachloro-m-xylene	65 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	77 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: MW-EW-11

Date Sampled: 11/26/13 11:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-04

Sample Matrix: Ground Water

Units: ug/L

Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
1,1,1-Trichloroethane	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	12/03/13 15:40	CWL0028	CL30332
1,1,2-Trichloroethane	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
1,1-Dichloroethane	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
1,1-Dichloroethene	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
1,1-Dichloropropene	ND (2.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
1,2,3-Trichloropropane	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
1,2-Dibromoethane	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
1,2-Dichlorobenzene	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
1,2-Dichloroethane	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
1,2-Dichloropropane	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
1,3-Dichlorobenzene	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
1,3-Dichloropropane	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
1,4-Dichlorobenzene	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
1,4-Dioxane - Screen	ND (500)		8260B		1	12/03/13 15:40	CWL0028	CL30332
2,2-Dichloropropane	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
2-Butanone	ND (10.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
2-Chlorotoluene	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
2-Hexanone	ND (10.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
4-Chlorotoluene	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
4-Isopropyltoluene	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Acetone	ND (10.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Benzene	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Bromobenzene	ND (2.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: MW-EW-11

Date Sampled: 11/26/13 11:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-04

Sample Matrix: Ground Water

Units: ug/L

Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Bromodichloromethane	ND (0.6)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Bromoform	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Bromomethane	ND (2.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Carbon Disulfide	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Carbon Tetrachloride	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Chlorobenzene	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Chloroethane	ND (2.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Chloroform	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Chloromethane	ND (2.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
cis-1,2-Dichloroethene	47.6 (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Dibromochloromethane	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Dibromomethane	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Dichlorodifluoromethane	ND (2.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Diethyl Ether	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Di-isopropyl ether	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Ethylbenzene	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Hexachlorobutadiene	ND (0.6)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Hexachloroethane	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Isopropylbenzene	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Methylene Chloride	ND (2.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Naphthalene	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
n-Butylbenzene	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
n-Propylbenzene	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
sec-Butylbenzene	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Styrene	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
tert-Butylbenzene	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: MW-EW-11

Date Sampled: 11/26/13 11:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-04

Sample Matrix: Ground Water

Units: ug/L

Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrachloroethene	6.5 (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Tetrahydrofuran	ND (5.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Toluene	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Trichloroethene	100 (10.0)		8260B		10	12/04/13 16:47	CWL0028	CL30332
Trichlorofluoromethane	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Vinyl Chloride	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Xylene O	ND (1.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Xylene P,M	ND (2.0)		8260B		1	12/03/13 15:40	CWL0028	CL30332
Xylenes (Total)	ND (2.0)		8260B		1	12/03/13 15:40		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	110 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	100 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	106 %		70-130
<i>Surrogate: Toluene-d8</i>	102 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: B-28

Date Sampled: 11/26/13 12:20

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-05

Sample Matrix: Ground Water

Units: ug/L

Analyst: TAJ

Prepared: 12/2/13 16:30

Cleanup Method: 3665A

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	12/02/13 22:53		CL30208
Aroclor 1221	ND (0.09)		8082A		1	12/02/13 22:53		CL30208
Aroclor 1232	ND (0.09)		8082A		1	12/02/13 22:53		CL30208
Aroclor 1242	ND (0.09)		8082A		1	12/02/13 22:53		CL30208
Aroclor 1248	ND (0.09)		8082A		1	12/02/13 22:53		CL30208
Aroclor 1254	0.27 (0.09)		8082A		1	12/02/13 22:53		CL30208
Aroclor 1260	ND (0.09)		8082A		1	12/02/13 22:53		CL30208
Aroclor 1262	ND (0.09)		8082A		1	12/02/13 22:53		CL30208
Aroclor 1268	ND (0.09)		8082A		1	12/02/13 22:53		CL30208

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	61 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	61 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	63 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	76 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: B-28

Date Sampled: 11/26/13 12:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-05

Sample Matrix: Ground Water

Units: ug/L

Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
1,1,1-Trichloroethane	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	12/03/13 16:06	CWL0028	CL30332
1,1,2-Trichloroethane	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
1,1-Dichloroethane	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
1,1-Dichloroethene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
1,1-Dichloropropene	ND (2.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
1,2,3-Trichloropropane	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
1,2-Dibromoethane	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
1,2-Dichlorobenzene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
1,2-Dichloroethane	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
1,2-Dichloropropane	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
1,3-Dichlorobenzene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
1,3-Dichloropropane	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
1,4-Dichlorobenzene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
1,4-Dioxane - Screen	ND (500)		8260B		1	12/03/13 16:06	CWL0028	CL30332
2,2-Dichloropropane	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
2-Butanone	ND (10.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
2-Chlorotoluene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
2-Hexanone	ND (10.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
4-Chlorotoluene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
4-Isopropyltoluene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Acetone	ND (10.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Benzene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Bromobenzene	ND (2.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: B-28

Date Sampled: 11/26/13 12:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-05

Sample Matrix: Ground Water

Units: ug/L

Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Bromodichloromethane	ND (0.6)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Bromoform	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Bromomethane	ND (2.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Carbon Disulfide	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Carbon Tetrachloride	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Chlorobenzene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Chloroethane	ND (2.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Chloroform	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Chloromethane	ND (2.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Dibromochloromethane	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Dibromomethane	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Dichlorodifluoromethane	ND (2.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Diethyl Ether	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Di-isopropyl ether	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Ethylbenzene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Hexachlorobutadiene	ND (0.6)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Hexachloroethane	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Isopropylbenzene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Methylene Chloride	ND (2.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Naphthalene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
n-Butylbenzene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
n-Propylbenzene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
sec-Butylbenzene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Styrene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
tert-Butylbenzene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: B-28

Date Sampled: 11/26/13 12:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-05

Sample Matrix: Ground Water

Units: ug/L

Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrachloroethene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Tetrahydrofuran	ND (5.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Toluene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Trichloroethene	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Trichlorofluoromethane	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Vinyl Chloride	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Xylene O	ND (1.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Xylene P,M	ND (2.0)		8260B		1	12/03/13 16:06	CWL0028	CL30332
Xylenes (Total)	ND (2.0)		8260B		1	12/03/13 16:06		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	108 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	102 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	108 %		70-130
<i>Surrogate: Toluene-d8</i>	100 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: Duplicate

Date Sampled: 11/26/13 12:25

Percent Solids: N/A

Initial Volume: 1010

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-06

Sample Matrix: Ground Water

Units: ug/L

Analyst: TAJ

Prepared: 12/2/13 16:30

Cleanup Method: 3665A

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.10)		8082A		1	12/02/13 23:12		CL30208
Aroclor 1221	ND (0.10)		8082A		1	12/02/13 23:12		CL30208
Aroclor 1232	ND (0.10)		8082A		1	12/02/13 23:12		CL30208
Aroclor 1242	ND (0.10)		8082A		1	12/02/13 23:12		CL30208
Aroclor 1248	ND (0.10)		8082A		1	12/02/13 23:12		CL30208
Aroclor 1254	0.28 (0.10)		8082A		1	12/02/13 23:12		CL30208
Aroclor 1260	ND (0.10)		8082A		1	12/02/13 23:12		CL30208
Aroclor 1262	ND (0.10)		8082A		1	12/02/13 23:12		CL30208
Aroclor 1268	ND (0.10)		8082A		1	12/02/13 23:12		CL30208

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	63 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	63 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	67 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	85 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: Duplicate

Date Sampled: 11/26/13 12:25

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-06

Sample Matrix: Ground Water

Units: ug/L

Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
1,1,1-Trichloroethane	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	12/03/13 16:33	CWL0028	CL30332
1,1,2-Trichloroethane	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
1,1-Dichloroethane	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
1,1-Dichloroethene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
1,1-Dichloropropene	ND (2.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
1,2,3-Trichloropropane	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
1,2-Dibromoethane	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
1,2-Dichlorobenzene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
1,2-Dichloroethane	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
1,2-Dichloropropane	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
1,3-Dichlorobenzene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
1,3-Dichloropropane	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
1,4-Dichlorobenzene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
1,4-Dioxane - Screen	ND (500)		8260B		1	12/03/13 16:33	CWL0028	CL30332
2,2-Dichloropropane	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
2-Butanone	ND (10.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
2-Chlorotoluene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
2-Hexanone	ND (10.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
4-Chlorotoluene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
4-Isopropyltoluene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Acetone	ND (10.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Benzene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Bromobenzene	ND (2.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: Duplicate

Date Sampled: 11/26/13 12:25

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-06

Sample Matrix: Ground Water

Units: ug/L

Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Bromodichloromethane	ND (0.6)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Bromoform	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Bromomethane	ND (2.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Carbon Disulfide	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Carbon Tetrachloride	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Chlorobenzene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Chloroethane	ND (2.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Chloroform	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Chloromethane	ND (2.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Dibromochloromethane	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Dibromomethane	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Dichlorodifluoromethane	ND (2.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Diethyl Ether	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Di-isopropyl ether	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Ethylbenzene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Hexachlorobutadiene	ND (0.6)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Hexachloroethane	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Isopropylbenzene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Methylene Chloride	ND (2.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Naphthalene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
n-Butylbenzene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
n-Propylbenzene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
sec-Butylbenzene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Styrene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
tert-Butylbenzene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: Duplicate

Date Sampled: 11/26/13 12:25

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-06

Sample Matrix: Ground Water

Units: ug/L

Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrachloroethene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Tetrahydrofuran	ND (5.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Toluene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Trichloroethene	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Trichlorofluoromethane	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Vinyl Chloride	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Xylene O	ND (1.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Xylene P,M	ND (2.0)		8260B		1	12/03/13 16:33	CWL0028	CL30332
Xylenes (Total)	ND (2.0)		8260B		1	12/03/13 16:33		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	106 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	101 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	107 %		70-130
<i>Surrogate: Toluene-d8</i>	101 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: MW-3AR

Date Sampled: 11/26/13 13:15

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-07

Sample Matrix: Ground Water

Units: ug/L

Analyst: TAJ

Prepared: 12/2/13 16:30

Cleanup Method: 3665A

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	12/02/13 23:31		CL30208
Aroclor 1221	ND (0.09)		8082A		1	12/02/13 23:31		CL30208
Aroclor 1232	ND (0.09)		8082A		1	12/02/13 23:31		CL30208
Aroclor 1242	ND (0.09)		8082A		1	12/02/13 23:31		CL30208
Aroclor 1248	ND (0.09)		8082A		1	12/02/13 23:31		CL30208
Aroclor 1254	ND (0.09)		8082A		1	12/02/13 23:31		CL30208
Aroclor 1260	ND (0.09)		8082A		1	12/02/13 23:31		CL30208
Aroclor 1262	ND (0.09)		8082A		1	12/02/13 23:31		CL30208
Aroclor 1268	ND (0.09)		8082A		1	12/02/13 23:31		CL30208

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	47 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	49 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	57 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	68 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: MW-3AR

Date Sampled: 11/26/13 13:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-07

Sample Matrix: Ground Water

Units: ug/L

Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
1,1,1-Trichloroethane	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	12/03/13 17:00	CWL0028	CL30332
1,1,2-Trichloroethane	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
1,1-Dichloroethane	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
1,1-Dichloroethene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
1,1-Dichloropropene	ND (2.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
1,2,3-Trichloropropane	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
1,2-Dibromoethane	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
1,2-Dichlorobenzene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
1,2-Dichloroethane	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
1,2-Dichloropropane	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
1,3-Dichlorobenzene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
1,3-Dichloropropane	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
1,4-Dichlorobenzene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
1,4-Dioxane - Screen	ND (500)		8260B		1	12/03/13 17:00	CWL0028	CL30332
2,2-Dichloropropane	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
2-Butanone	ND (10.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
2-Chlorotoluene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
2-Hexanone	ND (10.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
4-Chlorotoluene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
4-Isopropyltoluene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Acetone	ND (10.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Benzene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Bromobenzene	ND (2.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: MW-3AR

Date Sampled: 11/26/13 13:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-07

Sample Matrix: Ground Water

Units: ug/L

Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Bromodichloromethane	ND (0.6)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Bromoform	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Bromomethane	ND (2.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Carbon Disulfide	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Carbon Tetrachloride	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Chlorobenzene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Chloroethane	ND (2.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Chloroform	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Chloromethane	ND (2.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Dibromochloromethane	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Dibromomethane	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Dichlorodifluoromethane	ND (2.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Diethyl Ether	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Di-isopropyl ether	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Ethylbenzene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Hexachlorobutadiene	ND (0.6)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Hexachloroethane	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Isopropylbenzene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Methylene Chloride	ND (2.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Naphthalene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
n-Butylbenzene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
n-Propylbenzene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
sec-Butylbenzene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Styrene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
tert-Butylbenzene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332



ESS Laboratory

Division of Thielsch Engineering, Inc.

BAL Laboratory

*The Microbiology Division
of Thielsch Engineering, Inc.*



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: MW-3AR

Date Sampled: 11/26/13 13:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-07

Sample Matrix: Ground Water

Units: ug/L

Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrachloroethene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Tetrahydrofuran	ND (5.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Toluene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Trichloroethene	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Trichlorofluoromethane	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Vinyl Chloride	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Xylene O	ND (1.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Xylene P,M	ND (2.0)		8260B		1	12/03/13 17:00	CWL0028	CL30332
Xylenes (Total)	ND (2.0)		8260B		1	12/03/13 17:00		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	109 %		70-130
Surrogate: 4-Bromofluorobenzene	99 %		70-130
Surrogate: Dibromofluoromethane	105 %		70-130
Surrogate: Toluene-d8	99 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: Trip Blank

Date Sampled: 11/26/13 08:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-08

Sample Matrix: Aqueous

Units: ug/L

Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
1,1,1-Trichloroethane	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
1,1,2,2-Tetrachloroethane	ND (0.5)		8260B		1	12/03/13 13:25	CWL0028	CL30332
1,1,2-Trichloroethane	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
1,1-Dichloroethane	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
1,1-Dichloroethene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
1,1-Dichloropropene	ND (2.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
1,2,3-Trichlorobenzene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
1,2,3-Trichloropropane	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
1,2,4-Trichlorobenzene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
1,2,4-Trimethylbenzene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
1,2-Dibromo-3-Chloropropane	ND (5.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
1,2-Dibromoethane	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
1,2-Dichlorobenzene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
1,2-Dichloroethane	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
1,2-Dichloropropane	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
1,3,5-Trimethylbenzene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
1,3-Dichlorobenzene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
1,3-Dichloropropane	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
1,4-Dichlorobenzene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
1,4-Dioxane - Screen	ND (500)		8260B		1	12/03/13 13:25	CWL0028	CL30332
2,2-Dichloropropane	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
2-Butanone	ND (10.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
2-Chlorotoluene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
2-Hexanone	ND (10.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
4-Chlorotoluene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
4-Isopropyltoluene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
4-Methyl-2-Pentanone	ND (10.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Acetone	ND (10.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Benzene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Bromobenzene	ND (2.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: Trip Blank

Date Sampled: 11/26/13 08:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-08

Sample Matrix: Aqueous

Units: ug/L

Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Bromodichloromethane	ND (0.6)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Bromoform	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Bromomethane	ND (2.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Carbon Disulfide	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Carbon Tetrachloride	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Chlorobenzene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Chloroethane	ND (2.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Chloroform	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Chloromethane	ND (2.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
cis-1,3-Dichloropropene	ND (0.4)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Dibromochloromethane	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Dibromomethane	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Dichlorodifluoromethane	ND (2.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Diethyl Ether	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Di-isopropyl ether	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Ethyl tertiary-butyl ether	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Ethylbenzene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Hexachlorobutadiene	ND (0.6)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Hexachloroethane	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Isopropylbenzene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Methylene Chloride	ND (2.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Naphthalene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
n-Butylbenzene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
n-Propylbenzene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
sec-Butylbenzene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Styrene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
tert-Butylbenzene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

Client Sample ID: Trip Blank

Date Sampled: 11/26/13 08:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1311544

ESS Laboratory Sample ID: 1311544-08

Sample Matrix: Aqueous

Units: ug/L

Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrachloroethene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Tetrahydrofuran	ND (5.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Toluene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
trans-1,2-Dichloroethene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
trans-1,3-Dichloropropene	ND (0.4)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Trichloroethene	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Trichlorofluoromethane	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Vinyl Chloride	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Xylene O	ND (1.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Xylene P,M	ND (2.0)		8260B		1	12/03/13 13:25	CWL0028	CL30332
Xylenes (Total)	ND (2.0)		8260B		1	12/03/13 13:25		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	108 %		70-130
Surrogate: 4-Bromofluorobenzene	102 %		70-130
Surrogate: Dibromofluoromethane	105 %		70-130
Surrogate: Toluene-d8	104 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1311544

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8082A Polychlorinated Biphenyls (PCB)

Batch CL30208 - 3510C

Blank

Aroclor 1016	ND	0.10	ug/L
Aroclor 1016 (1)	ND	0.10	ug/L
Aroclor 1016 (1) [2C]	ND	0.10	ug/L
Aroclor 1016 (2)	ND	0.10	ug/L
Aroclor 1016 (2) [2C]	ND	0.10	ug/L
Aroclor 1016 (3)	ND	0.10	ug/L
Aroclor 1016 (3) [2C]	ND	0.10	ug/L
Aroclor 1016 (4)	ND	0.10	ug/L
Aroclor 1016 (4) [2C]	ND	0.10	ug/L
Aroclor 1016 (5)	ND	0.10	ug/L
Aroclor 1016 (5) [2C]	ND	0.10	ug/L
Aroclor 1221	ND	0.10	ug/L
Aroclor 1221 (1)	ND	0.10	ug/L
Aroclor 1221 (1) [2C]	ND	0.10	ug/L
Aroclor 1221 (2)	ND	0.10	ug/L
Aroclor 1221 (2) [2C]	ND	0.10	ug/L
Aroclor 1221 (3)	ND	0.10	ug/L
Aroclor 1221 (3) [2C]	ND	0.10	ug/L
Aroclor 1221 (4)	ND	0.10	ug/L
Aroclor 1221 (4) [2C]	ND	0.10	ug/L
Aroclor 1221 (5)	ND	0.10	ug/L
Aroclor 1221 (5) [2C]	ND	0.10	ug/L
Aroclor 1232	ND	0.10	ug/L
Aroclor 1232 (1)	ND	0.10	ug/L
Aroclor 1232 (1) [2C]	ND	0.10	ug/L
Aroclor 1232 (2)	ND	0.10	ug/L
Aroclor 1232 (2) [2C]	ND	0.10	ug/L
Aroclor 1232 (3)	ND	0.10	ug/L
Aroclor 1232 (3) [2C]	ND	0.10	ug/L
Aroclor 1232 (4)	ND	0.10	ug/L
Aroclor 1232 (4) [2C]	ND	0.10	ug/L
Aroclor 1232 (5)	ND	0.10	ug/L
Aroclor 1232 (5) [2C]	ND	0.10	ug/L
Aroclor 1242	ND	0.10	ug/L
Aroclor 1242 (1)	ND	0.10	ug/L
Aroclor 1242 (1) [2C]	ND	0.10	ug/L
Aroclor 1242 (2)	ND	0.10	ug/L
Aroclor 1242 (2) [2C]	ND	0.10	ug/L
Aroclor 1242 (3)	ND	0.10	ug/L
Aroclor 1242 (3) [2C]	ND	0.10	ug/L
Aroclor 1242 (4)	ND	0.10	ug/L
Aroclor 1242 (4) [2C]	ND	0.10	ug/L
Aroclor 1242 (5)	ND	0.10	ug/L
Aroclor 1242 (5) [2C]	ND	0.10	ug/L



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1311544

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8082A Polychlorinated Biphenyls (PCB)

Batch CL30208 - 3510C

Aroclor 1248	ND	0.10	ug/L							
Aroclor 1248 (1)	ND	0.10	ug/L							
Aroclor 1248 (1) [2C]	ND	0.10	ug/L							
Aroclor 1248 (2)	ND	0.10	ug/L							
Aroclor 1248 (2) [2C]	ND	0.10	ug/L							
Aroclor 1248 (3)	ND	0.10	ug/L							
Aroclor 1248 (3) [2C]	ND	0.10	ug/L							
Aroclor 1248 (4)	ND	0.10	ug/L							
Aroclor 1248 (4) [2C]	ND	0.10	ug/L							
Aroclor 1248 (5)	ND	0.10	ug/L							
Aroclor 1248 (5) [2C]	ND	0.10	ug/L							
Aroclor 1254	ND	0.10	ug/L							
Aroclor 1254 (1)	ND	0.10	ug/L							
Aroclor 1254 (1) [2C]	ND	0.10	ug/L							
Aroclor 1254 (2)	ND	0.10	ug/L							
Aroclor 1254 (2) [2C]	ND	0.10	ug/L							
Aroclor 1254 (3)	ND	0.10	ug/L							
Aroclor 1254 (3) [2C]	ND	0.10	ug/L							
Aroclor 1254 (4)	ND	0.10	ug/L							
Aroclor 1254 (4) [2C]	ND	0.10	ug/L							
Aroclor 1254 (5)	ND	0.10	ug/L							
Aroclor 1254 (5) [2C]	ND	0.10	ug/L							
Aroclor 1260	ND	0.10	ug/L							
Aroclor 1260 (1)	ND	0.10	ug/L							
Aroclor 1260 (1) [2C]	ND	0.10	ug/L							
Aroclor 1260 (2)	ND	0.10	ug/L							
Aroclor 1260 (2) [2C]	ND	0.10	ug/L							
Aroclor 1260 (3)	ND	0.10	ug/L							
Aroclor 1260 (3) [2C]	ND	0.10	ug/L							
Aroclor 1260 (4)	ND	0.10	ug/L							
Aroclor 1260 (4) [2C]	ND	0.10	ug/L							
Aroclor 1260 (5)	ND	0.10	ug/L							
Aroclor 1260 (5) [2C]	ND	0.10	ug/L							
Aroclor 1262	ND	0.10	ug/L							
Aroclor 1262 (1)	ND	0.10	ug/L							
Aroclor 1262 (1) [2C]	ND	0.10	ug/L							
Aroclor 1262 (2)	ND	0.10	ug/L							
Aroclor 1262 (2) [2C]	ND	0.10	ug/L							
Aroclor 1262 (3)	ND	0.10	ug/L							
Aroclor 1262 (3) [2C]	ND	0.10	ug/L							
Aroclor 1262 (4)	ND	0.10	ug/L							
Aroclor 1262 (4) [2C]	ND	0.10	ug/L							
Aroclor 1262 (5)	ND	0.10	ug/L							
Aroclor 1262 (5) [2C]	ND	0.10	ug/L							
Aroclor 1268	ND	0.10	ug/L							



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1311544

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8082A Polychlorinated Biphenyls (PCB)

Batch CL30208 - 3510C

Aroclor 1268 (1)	ND	0.10	ug/L							
Aroclor 1268 (1) [2C]	ND	0.10	ug/L							
Aroclor 1268 (2)	ND	0.10	ug/L							
Aroclor 1268 (2) [2C]	ND	0.10	ug/L							
Aroclor 1268 (3)	ND	0.10	ug/L							
Aroclor 1268 (3) [2C]	ND	0.10	ug/L							
Aroclor 1268 (4)	ND	0.10	ug/L							
Aroclor 1268 (4) [2C]	ND	0.10	ug/L							
Aroclor 1268 (5)	ND	0.10	ug/L							
Aroclor 1268 (5) [2C]	ND	0.10	ug/L							

Surrogate: Decachlorobiphenyl	0.0452	ug/L	0.05000	90	30-150
Surrogate: Decachlorobiphenyl [2C]	0.0450	ug/L	0.05000	90	30-150
Surrogate: Tetrachloro-m-xylene	0.0341	ug/L	0.05000	68	30-150
Surrogate: Tetrachloro-m-xylene [2C]	0.0437	ug/L	0.05000	87	30-150

LCS										
Aroclor 1016	0.91	0.10	ug/L	1.000		91	40-140			
Aroclor 1260	0.79	0.10	ug/L	1.000		79	40-140			

Surrogate: Decachlorobiphenyl	0.0401	ug/L	0.05000	80	30-150
Surrogate: Decachlorobiphenyl [2C]	0.0397	ug/L	0.05000	79	30-150
Surrogate: Tetrachloro-m-xylene	0.0337	ug/L	0.05000	67	30-150
Surrogate: Tetrachloro-m-xylene [2C]	0.0400	ug/L	0.05000	80	30-150

LCS Dup										
Aroclor 1016	1.19	0.10	ug/L	1.000		119	40-140	27	20	D+
Aroclor 1260	0.78	0.10	ug/L	1.000		78	40-140	2	20	

Surrogate: Decachlorobiphenyl	0.0389	ug/L	0.05000	78	30-150
Surrogate: Decachlorobiphenyl [2C]	0.0388	ug/L	0.05000	78	30-150
Surrogate: Tetrachloro-m-xylene	0.0324	ug/L	0.05000	65	30-150
Surrogate: Tetrachloro-m-xylene [2C]	0.0409	ug/L	0.05000	82	30-150

Batch CL30431 - 3510C

Blank										
Aroclor 1016	ND	0.10	ug/L							
Aroclor 1016 (1)	ND	0.10	ug/L							
Aroclor 1016 (1) [2C]	ND	0.10	ug/L							
Aroclor 1016 (2)	ND	0.10	ug/L							
Aroclor 1016 (2) [2C]	ND	0.10	ug/L							
Aroclor 1016 (3)	ND	0.10	ug/L							
Aroclor 1016 (3) [2C]	ND	0.10	ug/L							
Aroclor 1016 (4)	ND	0.10	ug/L							
Aroclor 1016 (4) [2C]	ND	0.10	ug/L							
Aroclor 1016 (5)	ND	0.10	ug/L							
Aroclor 1016 (5) [2C]	ND	0.10	ug/L							
Aroclor 1221	ND	0.10	ug/L							



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1311544

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8082A Polychlorinated Biphenyls (PCB)

Batch CL30431 - 3510C

Aroclor 1221 (1)	ND	0.10	ug/L
Aroclor 1221 (1) [2C]	ND	0.10	ug/L
Aroclor 1221 (2)	ND	0.10	ug/L
Aroclor 1221 (2) [2C]	ND	0.10	ug/L
Aroclor 1221 (3)	ND	0.10	ug/L
Aroclor 1221 (3) [2C]	ND	0.10	ug/L
Aroclor 1221 (4)	ND	0.10	ug/L
Aroclor 1221 (4) [2C]	ND	0.10	ug/L
Aroclor 1221 (5)	ND	0.10	ug/L
Aroclor 1221 (5) [2C]	ND	0.10	ug/L
Aroclor 1232	ND	0.10	ug/L
Aroclor 1232 (1)	ND	0.10	ug/L
Aroclor 1232 (1) [2C]	ND	0.10	ug/L
Aroclor 1232 (2)	ND	0.10	ug/L
Aroclor 1232 (2) [2C]	ND	0.10	ug/L
Aroclor 1232 (3)	ND	0.10	ug/L
Aroclor 1232 (3) [2C]	ND	0.10	ug/L
Aroclor 1232 (4)	ND	0.10	ug/L
Aroclor 1232 (4) [2C]	ND	0.10	ug/L
Aroclor 1232 (5)	ND	0.10	ug/L
Aroclor 1232 (5) [2C]	ND	0.10	ug/L
Aroclor 1242	ND	0.10	ug/L
Aroclor 1242 (1)	ND	0.10	ug/L
Aroclor 1242 (1) [2C]	ND	0.10	ug/L
Aroclor 1242 (2)	ND	0.10	ug/L
Aroclor 1242 (2) [2C]	ND	0.10	ug/L
Aroclor 1242 (3)	ND	0.10	ug/L
Aroclor 1242 (3) [2C]	ND	0.10	ug/L
Aroclor 1242 (4)	ND	0.10	ug/L
Aroclor 1242 (4) [2C]	ND	0.10	ug/L
Aroclor 1242 (5)	ND	0.10	ug/L
Aroclor 1242 (5) [2C]	ND	0.10	ug/L
Aroclor 1248	ND	0.10	ug/L
Aroclor 1248 (1)	ND	0.10	ug/L
Aroclor 1248 (1) [2C]	ND	0.10	ug/L
Aroclor 1248 (2)	ND	0.10	ug/L
Aroclor 1248 (2) [2C]	ND	0.10	ug/L
Aroclor 1248 (3)	ND	0.10	ug/L
Aroclor 1248 (3) [2C]	ND	0.10	ug/L
Aroclor 1248 (4)	ND	0.10	ug/L
Aroclor 1248 (4) [2C]	ND	0.10	ug/L
Aroclor 1248 (5)	ND	0.10	ug/L
Aroclor 1248 (5) [2C]	ND	0.10	ug/L
Aroclor 1254	ND	0.10	ug/L
Aroclor 1254 (1)	ND	0.10	ug/L



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1311544

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8082A Polychlorinated Biphenyls (PCB)

Batch CL30431 - 3510C

Aroclor 1254 (1) [2C]	ND	0.10	ug/L							
Aroclor 1254 (2)	ND	0.10	ug/L							
Aroclor 1254 (2) [2C]	ND	0.10	ug/L							
Aroclor 1254 (3)	ND	0.10	ug/L							
Aroclor 1254 (3) [2C]	ND	0.10	ug/L							
Aroclor 1254 (4)	ND	0.10	ug/L							
Aroclor 1254 (4) [2C]	ND	0.10	ug/L							
Aroclor 1254 (5)	ND	0.10	ug/L							
Aroclor 1254 (5) [2C]	ND	0.10	ug/L							
Aroclor 1260	ND	0.10	ug/L							
Aroclor 1260 (1)	ND	0.10	ug/L							
Aroclor 1260 (1) [2C]	ND	0.10	ug/L							
Aroclor 1260 (2)	ND	0.10	ug/L							
Aroclor 1260 (2) [2C]	ND	0.10	ug/L							
Aroclor 1260 (3)	ND	0.10	ug/L							
Aroclor 1260 (3) [2C]	ND	0.10	ug/L							
Aroclor 1260 (4)	ND	0.10	ug/L							
Aroclor 1260 (4) [2C]	ND	0.10	ug/L							
Aroclor 1260 (5)	ND	0.10	ug/L							
Aroclor 1260 (5) [2C]	ND	0.10	ug/L							
Aroclor 1262	ND	0.10	ug/L							
Aroclor 1262 (1)	ND	0.10	ug/L							
Aroclor 1262 (1) [2C]	ND	0.10	ug/L							
Aroclor 1262 (2)	ND	0.10	ug/L							
Aroclor 1262 (2) [2C]	ND	0.10	ug/L							
Aroclor 1262 (3)	ND	0.10	ug/L							
Aroclor 1262 (3) [2C]	ND	0.10	ug/L							
Aroclor 1262 (4)	ND	0.10	ug/L							
Aroclor 1262 (4) [2C]	ND	0.10	ug/L							
Aroclor 1262 (5)	ND	0.10	ug/L							
Aroclor 1262 (5) [2C]	ND	0.10	ug/L							
Aroclor 1268	ND	0.10	ug/L							
Aroclor 1268 (1)	ND	0.10	ug/L							
Aroclor 1268 (1) [2C]	ND	0.10	ug/L							
Aroclor 1268 (2)	ND	0.10	ug/L							
Aroclor 1268 (2) [2C]	ND	0.10	ug/L							
Aroclor 1268 (3)	ND	0.10	ug/L							
Aroclor 1268 (3) [2C]	ND	0.10	ug/L							
Aroclor 1268 (4)	ND	0.10	ug/L							
Aroclor 1268 (4) [2C]	ND	0.10	ug/L							
Aroclor 1268 (5)	ND	0.10	ug/L							
Aroclor 1268 (5) [2C]	ND	0.10	ug/L							

Surrogate: Decachlorobiphenyl	0.0460	ug/L	0.05000	92	30-150
Surrogate: Decachlorobiphenyl [2C]	0.0465	ug/L	0.05000	93	30-150
Surrogate: Tetrachloro-m-xylene	0.0350	ug/L	0.05000	70	30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1311544

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8082A Polychlorinated Biphenyls (PCB)

Batch CL30431 - 3510C

<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	0.0444		ug/L	0.05000		89	30-150			
LCS										
Aroclor 1016	0.97	0.10	ug/L	1.000		97	40-140			
Aroclor 1260	0.84	0.10	ug/L	1.000		84	40-140			
<i>Surrogate: Decachlorobiphenyl</i>										
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.0430		ug/L	0.05000		86	30-150			
<i>Surrogate: Tetrachloro-m-xylene</i>	0.0426		ug/L	0.05000		85	30-150			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	0.0360		ug/L	0.05000		72	30-150			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	0.0419		ug/L	0.05000		84	30-150			
LCS Dup										
Aroclor 1016	1.23	0.10	ug/L	1.000		123	40-140	23	20	D+
Aroclor 1260	0.80	0.10	ug/L	1.000		80	40-140	5	20	
<i>Surrogate: Decachlorobiphenyl</i>	0.0411		ug/L	0.05000		82	30-150			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.0411		ug/L	0.05000		82	30-150			
<i>Surrogate: Tetrachloro-m-xylene</i>	0.0339		ug/L	0.05000		68	30-150			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	0.0416		ug/L	0.05000		83	30-150			

8260B Volatile Organic Compounds

Batch CL30332 - 5030B

Blank										
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L							
1,1,1-Trichloroethane	ND	1.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L							
1,1,2-Trichloroethane	ND	1.0	ug/L							
1,1-Dichloroethane	ND	1.0	ug/L							
1,1-Dichloroethene	ND	1.0	ug/L							
1,1-Dichloropropene	ND	2.0	ug/L							
1,2,3-Trichlorobenzene	ND	1.0	ug/L							
1,2,3-Trichloropropane	ND	1.0	ug/L							
1,2,4-Trichlorobenzene	ND	1.0	ug/L							
1,2,4-Trimethylbenzene	ND	1.0	ug/L							
1,2-Dibromo-3-Chloropropane	ND	5.0	ug/L							
1,2-Dibromoethane	ND	1.0	ug/L							
1,2-Dichlorobenzene	ND	1.0	ug/L							
1,2-Dichloroethane	ND	1.0	ug/L							
1,2-Dichloropropane	ND	1.0	ug/L							
1,3,5-Trimethylbenzene	ND	1.0	ug/L							
1,3-Dichlorobenzene	ND	1.0	ug/L							
1,3-Dichloropropane	ND	1.0	ug/L							
1,4-Dichlorobenzene	ND	1.0	ug/L							
1,4-Dioxane - Screen	ND	500	ug/L							
2,2-Dichloropropane	ND	1.0	ug/L							
2-Butanone	ND	10.0	ug/L							



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1311544

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CL30332 - 5030B

2-Chlorotoluene	ND	1.0	ug/L
2-Hexanone	ND	10.0	ug/L
4-Chlorotoluene	ND	1.0	ug/L
4-Isopropyltoluene	ND	1.0	ug/L
4-Methyl-2-Pentanone	ND	10.0	ug/L
Acetone	ND	10.0	ug/L
Benzene	ND	1.0	ug/L
Bromobenzene	ND	2.0	ug/L
Bromochloromethane	ND	1.0	ug/L
Bromodichloromethane	ND	0.6	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon Disulfide	ND	1.0	ug/L
Carbon Tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	0.4	ug/L
Dibromochloromethane	ND	1.0	ug/L
Dibromomethane	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
Diethyl Ether	ND	1.0	ug/L
Di-isopropyl ether	ND	1.0	ug/L
Ethyl tertiary-butyl ether	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Hexachlorobutadiene	ND	0.6	ug/L
Hexachloroethane	ND	1.0	ug/L
Isopropylbenzene	ND	1.0	ug/L
Methyl tert-Butyl Ether	ND	1.0	ug/L
Methylene Chloride	ND	2.0	ug/L
Naphthalene	ND	1.0	ug/L
n-Butylbenzene	ND	1.0	ug/L
n-Propylbenzene	ND	1.0	ug/L
sec-Butylbenzene	ND	1.0	ug/L
Styrene	ND	1.0	ug/L
tert-Butylbenzene	ND	1.0	ug/L
Tertiary-amyl methyl ether	ND	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Tetrahydrofuran	ND	5.0	ug/L
Toluene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,3-Dichloropropene	ND	0.4	ug/L
Trichloroethene	ND	1.0	ug/L



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1311544

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CL30332 - 5030B

Trichlorofluoromethane	ND	1.0	ug/L							
Vinyl Chloride	ND	1.0	ug/L							
Xylene O	ND	1.0	ug/L							
Xylene P,M	ND	2.0	ug/L							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	27.7		ug/L	25.00		111	70-130			
<i>Surrogate: 4-Bromofluorobenzene</i>	25.3		ug/L	25.00		101	70-130			
<i>Surrogate: Dibromofluoromethane</i>	26.8		ug/L	25.00		107	70-130			
<i>Surrogate: Toluene-d8</i>	25.2		ug/L	25.00		101	70-130			

LCS

1,1,1,2-Tetrachloroethane	8.7		ug/L	10.00		87	70-130			
1,1,1-Trichloroethane	10.5		ug/L	10.00		105	70-130			
1,1,2,2-Tetrachloroethane	11.9		ug/L	10.00		119	70-130			
1,1,2-Trichloroethane	11.5		ug/L	10.00		115	70-130			
1,1-Dichloroethane	11.9		ug/L	10.00		119	70-130			
1,1-Dichloroethene	10.3		ug/L	10.00		103	70-130			
1,1-Dichloropropene	12.9		ug/L	10.00		129	70-130			
1,2,3-Trichlorobenzene	10.9		ug/L	10.00		109	70-130			
1,2,3-Trichloropropane	9.8		ug/L	10.00		98	70-130			
1,2,4-Trichlorobenzene	10.1		ug/L	10.00		101	70-130			
1,2,4-Trimethylbenzene	10.2		ug/L	10.00		102	70-130			
1,2-Dibromo-3-Chloropropane	8.7		ug/L	10.00		87	70-130			
1,2-Dibromoethane	10.2		ug/L	10.00		102	70-130			
1,2-Dichlorobenzene	9.9		ug/L	10.00		99	70-130			
1,2-Dichloroethane	11.7		ug/L	10.00		117	70-130			
1,2-Dichloropropane	11.1		ug/L	10.00		111	70-130			
1,3,5-Trimethylbenzene	10.3		ug/L	10.00		103	70-130			
1,3-Dichlorobenzene	9.7		ug/L	10.00		97	70-130			
1,3-Dichloropropane	11.0		ug/L	10.00		110	70-130			
1,4-Dichlorobenzene	9.6		ug/L	10.00		96	70-130			
1,4-Dioxane - Screen	311		ug/L	200.0		155	0-332			
2,2-Dichloropropane	10.0		ug/L	10.00		100	70-130			
2-Butanone	55.7		ug/L	50.00		111	70-130			
2-Chlorotoluene	11.3		ug/L	10.00		113	70-130			
2-Hexanone	50.4		ug/L	50.00		101	70-130			
4-Chlorotoluene	11.1		ug/L	10.00		111	70-130			
4-Isopropyltoluene	9.8		ug/L	10.00		98	70-130			
4-Methyl-2-Pentanone	55.8		ug/L	50.00		112	70-130			
Acetone	47.3		ug/L	50.00		95	70-130			
Benzene	12.7		ug/L	10.00		127	70-130			
Bromobenzene	10.4		ug/L	10.00		104	70-130			
Bromochloromethane	10.6		ug/L	10.00		106	70-130			
Bromodichloromethane	9.8		ug/L	10.00		98	70-130			
Bromoform	9.5		ug/L	10.00		95	70-130			
Bromomethane	8.2		ug/L	10.00		82	70-130			
Carbon Disulfide	12.2		ug/L	10.00		122	70-130			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1311544

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CL30332 - 5030B

Carbon Tetrachloride	9.6		ug/L	10.00	96	70-130				
Chlorobenzene	10.8		ug/L	10.00	108	70-130				
Chloroethane	11.3		ug/L	10.00	113	70-130				
Chloroform	11.3		ug/L	10.00	113	70-130				
Chloromethane	11.3		ug/L	10.00	113	70-130				
cis-1,2-Dichloroethene	11.5		ug/L	10.00	115	70-130				
cis-1,3-Dichloropropene	10.9		ug/L	10.00	109	70-130				
Dibromochloromethane	8.9		ug/L	10.00	89	70-130				
Dibromomethane	11.7		ug/L	10.00	117	70-130				
Dichlorodifluoromethane	9.2		ug/L	10.00	92	70-130				
Diethyl Ether	11.4		ug/L	10.00	114	70-130				
Di-isopropyl ether	11.4		ug/L	10.00	114	70-130				
Ethyl tertiary-butyl ether	10.8		ug/L	10.00	108	70-130				
Ethylbenzene	11.0		ug/L	10.00	110	70-130				
Hexachlorobutadiene	9.9		ug/L	10.00	99	70-130				
Hexachloroethane	8.3		ug/L	10.00	83	70-130				
Isopropylbenzene	10.3		ug/L	10.00	103	70-130				
Methyl tert-Butyl Ether	10.1		ug/L	10.00	101	70-130				
Methylene Chloride	10.9		ug/L	10.00	109	70-130				
Naphthalene	9.0		ug/L	10.00	90	70-130				
n-Butylbenzene	10.8		ug/L	10.00	108	70-130				
n-Propylbenzene	10.8		ug/L	10.00	108	70-130				
sec-Butylbenzene	10.6		ug/L	10.00	106	70-130				
Styrene	10.2		ug/L	10.00	102	70-130				
tert-Butylbenzene	9.7		ug/L	10.00	97	70-130				
Tertiary-amyl methyl ether	10.0		ug/L	10.00	100	70-130				
Tetrachloroethene	8.4		ug/L	10.00	84	70-130				
Tetrahydrofuran	12.6		ug/L	10.00	126	70-130				
Toluene	11.0		ug/L	10.00	110	70-130				
trans-1,2-Dichloroethene	10.7		ug/L	10.00	107	70-130				
trans-1,3-Dichloropropene	9.7		ug/L	10.00	97	70-130				
Trichloroethene	10.8		ug/L	10.00	108	70-130				
Trichlorofluoromethane	7.8		ug/L	10.00	78	70-130				
Vinyl Chloride	12.9		ug/L	10.00	129	70-130				
Xylene O	10.5		ug/L	10.00	105	70-130				
Xylene P,M	21.7		ug/L	20.00	108	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	29.7		ug/L	25.00	119	70-130				
<i>Surrogate: 4-Bromofluorobenzene</i>	27.2		ug/L	25.00	109	70-130				
<i>Surrogate: Dibromofluoromethane</i>	28.1		ug/L	25.00	112	70-130				
<i>Surrogate: Toluene-d8</i>	28.3		ug/L	25.00	113	70-130				

LCS Dup

1,1,1,2-Tetrachloroethane	8.9		ug/L	10.00	89	70-130	3	25		
1,1,1-Trichloroethane	10.2		ug/L	10.00	102	70-130	3	25		
1,1,2,2-Tetrachloroethane	11.6		ug/L	10.00	116	70-130	2	25		
1,1,2-Trichloroethane	11.0		ug/L	10.00	110	70-130	4	25		



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1311544

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CL30332 - 5030B

1,1-Dichloroethane	12.2		ug/L	10.00	122	70-130	3	25		
1,1-Dichloroethene	9.9		ug/L	10.00	99	70-130	3	25		
1,1-Dichloropropene	13.1		ug/L	10.00	131	70-130	1	25		B+
1,2,3-Trichlorobenzene	10.2		ug/L	10.00	102	70-130	6	25		
1,2,3-Trichloropropane	9.5		ug/L	10.00	95	70-130	3	25		
1,2,4-Trichlorobenzene	9.0		ug/L	10.00	90	70-130	11	25		
1,2,4-Trimethylbenzene	9.8		ug/L	10.00	98	70-130	3	25		
1,2-Dibromo-3-Chloropropane	8.0		ug/L	10.00	80	70-130	8	25		
1,2-Dibromoethane	9.8		ug/L	10.00	98	70-130	4	25		
1,2-Dichlorobenzene	10.0		ug/L	10.00	100	70-130	2	25		
1,2-Dichloroethane	12.0		ug/L	10.00	120	70-130	3	25		
1,2-Dichloropropane	11.3		ug/L	10.00	113	70-130	2	25		
1,3,5-Trimethylbenzene	10.2		ug/L	10.00	102	70-130	0.7	25		
1,3-Dichlorobenzene	9.5		ug/L	10.00	95	70-130	2	25		
1,3-Dichloropropane	10.9		ug/L	10.00	109	70-130	1	25		
1,4-Dichlorobenzene	9.3		ug/L	10.00	93	70-130	3	25		
1,4-Dioxane - Screen	275		ug/L	200.0	138	0-332	12	200		
2,2-Dichloropropane	10.4		ug/L	10.00	104	70-130	4	25		
2-Butanone	53.0		ug/L	50.00	106	70-130	5	25		
2-Chlorotoluene	10.9		ug/L	10.00	109	70-130	4	25		
2-Hexanone	45.4		ug/L	50.00	91	70-130	10	25		
4-Chlorotoluene	10.8		ug/L	10.00	108	70-130	2	25		
4-Isopropyltoluene	9.5		ug/L	10.00	95	70-130	4	25		
4-Methyl-2-Pentanone	54.4		ug/L	50.00	109	70-130	2	25		
Acetone	45.4		ug/L	50.00	91	70-130	4	25		
Benzene	12.8		ug/L	10.00	128	70-130	1	25		
Bromobenzene	9.7		ug/L	10.00	97	70-130	6	25		
Bromochloromethane	10.2		ug/L	10.00	102	70-130	4	25		
Bromodichloromethane	10.3		ug/L	10.00	103	70-130	6	25		
Bromoform	9.1		ug/L	10.00	91	70-130	4	25		
Bromomethane	8.5		ug/L	10.00	85	70-130	3	25		
Carbon Disulfide	12.3		ug/L	10.00	123	70-130	0.9	25		
Carbon Tetrachloride	9.8		ug/L	10.00	98	70-130	2	25		
Chlorobenzene	10.5		ug/L	10.00	105	70-130	2	25		
Chloroethane	10.9		ug/L	10.00	109	70-130	3	25		
Chloroform	11.4		ug/L	10.00	114	70-130	0.5	25		
Chloromethane	11.5		ug/L	10.00	115	70-130	2	25		
cis-1,2-Dichloroethene	12.0		ug/L	10.00	120	70-130	4	25		
cis-1,3-Dichloropropene	11.4		ug/L	10.00	114	70-130	5	25		
Dibromochloromethane	8.7		ug/L	10.00	87	70-130	3	25		
Dibromomethane	11.9		ug/L	10.00	119	70-130	2	25		
Dichlorodifluoromethane	9.4		ug/L	10.00	94	70-130	2	25		
Diethyl Ether	11.4		ug/L	10.00	114	70-130	0.4	25		
Di-isopropyl ether	11.3		ug/L	10.00	113	70-130	0.9	25		
Ethyl tertiary-butyl ether	11.0		ug/L	10.00	110	70-130	2	25		



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1311544

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CL30332 - 5030B

Ethylbenzene	10.6		ug/L	10.00	106	70-130	3	25	
Hexachlorobutadiene	9.2		ug/L	10.00	92	70-130	7	25	
Hexachloroethane	7.7		ug/L	10.00	77	70-130	7	25	
Isopropylbenzene	10.7		ug/L	10.00	107	70-130	3	25	
Methyl tert-Butyl Ether	10.2		ug/L	10.00	102	70-130	1	25	
Methylene Chloride	11.5		ug/L	10.00	115	70-130	6	25	
Naphthalene	8.7		ug/L	10.00	87	70-130	3	25	
n-Butylbenzene	10.0		ug/L	10.00	100	70-130	8	25	
n-Propylbenzene	10.9		ug/L	10.00	109	70-130	0.09	25	
sec-Butylbenzene	10.4		ug/L	10.00	104	70-130	2	25	
Styrene	9.4		ug/L	10.00	94	70-130	8	25	
tert-Butylbenzene	9.5		ug/L	10.00	95	70-130	2	25	
Tertiary-amyl methyl ether	9.9		ug/L	10.00	99	70-130	2	25	
Tetrachloroethene	8.1		ug/L	10.00	81	70-130	4	25	
Tetrahydrofuran	11.6		ug/L	10.00	116	70-130	9	25	
Toluene	11.8		ug/L	10.00	118	70-130	7	25	
trans-1,2-Dichloroethene	10.7		ug/L	10.00	107	70-130	0.7	25	
trans-1,3-Dichloropropene	9.8		ug/L	10.00	98	70-130	1	25	
Trichloroethene	10.9		ug/L	10.00	109	70-130	1	25	
Trichlorofluoromethane	7.8		ug/L	10.00	78	70-130	0.3	25	
Vinyl Chloride	12.4		ug/L	10.00	124	70-130	3	25	
Xylene O	10.2		ug/L	10.00	102	70-130	3	25	
Xylene P,M	20.8		ug/L	20.00	104	70-130	4	25	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>28.8</i>		<i>ug/L</i>	<i>25.00</i>	<i>115</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>25.3</i>		<i>ug/L</i>	<i>25.00</i>	<i>101</i>	<i>70-130</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>28.4</i>		<i>ug/L</i>	<i>25.00</i>	<i>114</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>27.6</i>		<i>ug/L</i>	<i>25.00</i>	<i>111</i>	<i>70-130</i>			

Batch CL30436 - 5030B

Blank			
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
1,1-Dichloropropene	ND	2.0	ug/L
1,2,3-Trichlorobenzene	ND	1.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
1,2,4-Trichlorobenzene	ND	1.0	ug/L
1,2,4-Trimethylbenzene	ND	1.0	ug/L
1,2-Dibromo-3-Chloropropane	ND	5.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,2-Dichloropropane	ND	1.0	ug/L



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1311544

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CL30436 - 5030B

1,3,5-Trimethylbenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichloropropane	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,4-Dioxane - Screen	ND	500	ug/L
2,2-Dichloropropane	ND	1.0	ug/L
2-Butanone	ND	10.0	ug/L
2-Chlorotoluene	ND	1.0	ug/L
2-Hexanone	ND	10.0	ug/L
4-Chlorotoluene	ND	1.0	ug/L
4-Isopropyltoluene	ND	1.0	ug/L
4-Methyl-2-Pentanone	ND	10.0	ug/L
Acetone	ND	10.0	ug/L
Benzene	ND	1.0	ug/L
Bromobenzene	ND	2.0	ug/L
Bromochloromethane	ND	1.0	ug/L
Bromodichloromethane	ND	0.6	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon Disulfide	ND	1.0	ug/L
Carbon Tetrachloride	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
cis-1,3-Dichloropropene	ND	0.4	ug/L
Dibromochloromethane	ND	1.0	ug/L
Dibromomethane	ND	1.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
Diethyl Ether	ND	1.0	ug/L
Di-isopropyl ether	ND	1.0	ug/L
Ethyl tertiary-butyl ether	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Hexachlorobutadiene	ND	0.6	ug/L
Hexachloroethane	ND	1.0	ug/L
Isopropylbenzene	ND	1.0	ug/L
Methyl tert-Butyl Ether	ND	1.0	ug/L
Methylene Chloride	ND	2.0	ug/L
Naphthalene	ND	1.0	ug/L
n-Butylbenzene	ND	1.0	ug/L
n-Propylbenzene	ND	1.0	ug/L
sec-Butylbenzene	ND	1.0	ug/L
Styrene	ND	1.0	ug/L
tert-Butylbenzene	ND	1.0	ug/L



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1311544

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CL30436 - 5030B

Tertiary-amyl methyl ether	ND	1.0	ug/L							
Tetrachloroethene	ND	1.0	ug/L							
Tetrahydrofuran	ND	5.0	ug/L							
Toluene	ND	1.0	ug/L							
trans-1,2-Dichloroethene	ND	1.0	ug/L							
trans-1,3-Dichloropropene	ND	0.4	ug/L							
Trichloroethene	ND	1.0	ug/L							
Trichlorofluoromethane	ND	1.0	ug/L							
Vinyl Chloride	ND	1.0	ug/L							
Xylene O	ND	1.0	ug/L							
Xylene P,M	ND	2.0	ug/L							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	23.8		ug/L	25.00		95	70-130			
<i>Surrogate: 4-Bromofluorobenzene</i>	22.7		ug/L	25.00		91	70-130			
<i>Surrogate: Dibromofluoromethane</i>	22.7		ug/L	25.00		91	70-130			
<i>Surrogate: Toluene-d8</i>	23.6		ug/L	25.00		94	70-130			

LCS

1,1,1,2-Tetrachloroethane	8.7	ug/L	10.00	87	70-130
1,1,1-Trichloroethane	10.6	ug/L	10.00	106	70-130
1,1,2,2-Tetrachloroethane	9.5	ug/L	10.00	95	70-130
1,1,2-Trichloroethane	9.7	ug/L	10.00	97	70-130
1,1-Dichloroethane	9.8	ug/L	10.00	98	70-130
1,1-Dichloroethene	9.7	ug/L	10.00	97	70-130
1,1-Dichloropropene	10.4	ug/L	10.00	104	70-130
1,2,3-Trichlorobenzene	10.7	ug/L	10.00	107	70-130
1,2,3-Trichloropropane	8.6	ug/L	10.00	86	70-130
1,2,4-Trichlorobenzene	10.6	ug/L	10.00	106	70-130
1,2,4-Trimethylbenzene	10.0	ug/L	10.00	100	70-130
1,2-Dibromo-3-Chloropropane	8.6	ug/L	10.00	86	70-130
1,2-Dibromoethane	9.2	ug/L	10.00	92	70-130
1,2-Dichlorobenzene	10.1	ug/L	10.00	101	70-130
1,2-Dichloroethane	10.0	ug/L	10.00	100	70-130
1,2-Dichloropropane	9.6	ug/L	10.00	96	70-130
1,3,5-Trimethylbenzene	10.4	ug/L	10.00	104	70-130
1,3-Dichlorobenzene	10.3	ug/L	10.00	103	70-130
1,3-Dichloropropane	10.2	ug/L	10.00	102	70-130
1,4-Dichlorobenzene	10.0	ug/L	10.00	100	70-130
1,4-Dioxane - Screen	410	ug/L	200.0	205	0-332
2,2-Dichloropropane	9.9	ug/L	10.00	99	70-130
2-Butanone	38.6	ug/L	50.00	77	70-130
2-Chlorotoluene	10.6	ug/L	10.00	106	70-130
2-Hexanone	40.4	ug/L	50.00	81	70-130
4-Chlorotoluene	10.2	ug/L	10.00	102	70-130
4-Isopropyltoluene	10.2	ug/L	10.00	102	70-130
4-Methyl-2-Pentanone	41.8	ug/L	50.00	84	70-130
Acetone	40.5	ug/L	50.00	81	70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1311544

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CL30436 - 5030B

Benzene	10.2		ug/L	10.00	102	70-130				
Bromobenzene	9.7		ug/L	10.00	97	70-130				
Bromoform	9.8		ug/L	10.00	98	70-130				
Bromochloromethane	9.9		ug/L	10.00	99	70-130				
Bromodichloromethane	10.0		ug/L	10.00	100	70-130				
Bromoform	13.0		ug/L	10.00	130	70-130				
Bromomethane	9.6		ug/L	10.00	96	70-130				
Carbon Disulfide	10.8		ug/L	10.00	108	70-130				
Carbon Tetrachloride	9.9		ug/L	10.00	99	70-130				
Chlorobenzene	10.2		ug/L	10.00	102	70-130				
Chloroethane	10.1		ug/L	10.00	101	70-130				
Chloroform	10.6		ug/L	10.00	106	70-130				
cis-1,2-Dichloroethene	9.8		ug/L	10.00	98	70-130				
cis-1,3-Dichloropropene	10.5		ug/L	10.00	105	70-130				
Dibromochloromethane	9.6		ug/L	10.00	96	70-130				
Dibromomethane	9.4		ug/L	10.00	94	70-130				
Dichlorodifluoromethane	8.6		ug/L	10.00	86	70-130				
Diethyl Ether	10.9		ug/L	10.00	109	70-130				
Di-isopropyl ether	9.0		ug/L	10.00	90	70-130				
Ethyl tertiary-butyl ether	8.0		ug/L	10.00	80	70-130				
Ethylbenzene	9.8		ug/L	10.00	98	70-130				
Hexachlorobutadiene	13.6		ug/L	10.00	136	70-130				B+
Hexachloroethane	10.5		ug/L	10.00	105	70-130				
Isopropylbenzene	9.4		ug/L	10.00	94	70-130				
Methyl tert-Butyl Ether	7.9		ug/L	10.00	79	70-130				
Methylene Chloride	9.6		ug/L	10.00	96	70-130				
Naphthalene	9.9		ug/L	10.00	99	70-130				
n-Butylbenzene	10.2		ug/L	10.00	102	70-130				
n-Propylbenzene	9.7		ug/L	10.00	97	70-130				
sec-Butylbenzene	10.5		ug/L	10.00	105	70-130				
Styrene	9.1		ug/L	10.00	91	70-130				
tert-Butylbenzene	9.7		ug/L	10.00	97	70-130				
Tertiary-amyl methyl ether	7.1		ug/L	10.00	71	70-130				
Tetrachloroethene	8.8		ug/L	10.00	88	70-130				
Tetrahydrofuran	9.7		ug/L	10.00	97	70-130				
Toluene	10.4		ug/L	10.00	104	70-130				
trans-1,2-Dichloroethene	9.6		ug/L	10.00	96	70-130				
trans-1,3-Dichloropropene	8.7		ug/L	10.00	87	70-130				
Trichloroethene	9.7		ug/L	10.00	97	70-130				
Trichlorofluoromethane	9.5		ug/L	10.00	95	70-130				
Vinyl Chloride	11.2		ug/L	10.00	112	70-130				
Xylene O	10.3		ug/L	10.00	103	70-130				
Xylene P,M	20.8		ug/L	20.00	104	70-130				
Surrogate: 1,2-Dichloroethane-d4	25.3		ug/L	25.00	101	70-130				
Surrogate: 4-Bromofluorobenzene	24.6		ug/L	25.00	98	70-130				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1311544

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CL30436 - 5030B

<i>Surrogate: Dibromofluoromethane</i>	24.3		ug/L	25.00	97	70-130				
<i>Surrogate: Toluene-d8</i>	24.7		ug/L	25.00	99	70-130				
LCS Dup										
1,1,1,2-Tetrachloroethane	8.8		ug/L	10.00	88	70-130	0.8	25		
1,1,1-Trichloroethane	10.4		ug/L	10.00	104	70-130	2	25		
1,1,2,2-Tetrachloroethane	9.2		ug/L	10.00	92	70-130	3	25		
1,1,2-Trichloroethane	9.5		ug/L	10.00	95	70-130	2	25		
1,1-Dichloroethane	9.7		ug/L	10.00	97	70-130	2	25		
1,1-Dichloroethene	9.5		ug/L	10.00	95	70-130	2	25		
1,1-Dichloropropene	10.6		ug/L	10.00	106	70-130	2	25		
1,2,3-Trichlorobenzene	10.2		ug/L	10.00	102	70-130	5	25		
1,2,3-Trichloropropane	8.4		ug/L	10.00	84	70-130	2	25		
1,2,4-Trichlorobenzene	10.3		ug/L	10.00	103	70-130	3	25		
1,2,4-Trimethylbenzene	9.7		ug/L	10.00	97	70-130	3	25		
1,2-Dibromo-3-Chloropropane	9.0		ug/L	10.00	90	70-130	5	25		
1,2-Dibromoethane	9.4		ug/L	10.00	94	70-130	2	25		
1,2-Dichlorobenzene	9.6		ug/L	10.00	96	70-130	6	25		
1,2-Dichloroethane	10.2		ug/L	10.00	102	70-130	2	25		
1,2-Dichloropropane	9.0		ug/L	10.00	90	70-130	6	25		
1,3,5-Trimethylbenzene	10.2		ug/L	10.00	102	70-130	2	25		
1,3-Dichlorobenzene	9.9		ug/L	10.00	99	70-130	3	25		
1,3-Dichloropropane	10.0		ug/L	10.00	100	70-130	2	25		
1,4-Dichlorobenzene	9.4		ug/L	10.00	94	70-130	6	25		
1,4-Dioxane - Screen	257		ug/L	200.0	128	0-332	46	200		
2,2-Dichloropropane	9.8		ug/L	10.00	98	70-130	0.4	25		
2-Butanone	36.8		ug/L	50.00	74	70-130	5	25		
2-Chlorotoluene	10.3		ug/L	10.00	103	70-130	2	25		
2-Hexanone	40.8		ug/L	50.00	82	70-130	0.9	25		
4-Chlorotoluene	10.0		ug/L	10.00	100	70-130	2	25		
4-Isopropyltoluene	9.8		ug/L	10.00	98	70-130	4	25		
4-Methyl-2-Pentanone	41.5		ug/L	50.00	83	70-130	0.8	25		
Acetone	40.1		ug/L	50.00	80	70-130	1	25		
Benzene	10.1		ug/L	10.00	101	70-130	0.7	25		
Bromobenzene	9.8		ug/L	10.00	98	70-130	0.3	25		
Bromochloromethane	9.3		ug/L	10.00	93	70-130	6	25		
Bromodichloromethane	9.8		ug/L	10.00	98	70-130	1	25		
Bromoform	9.9		ug/L	10.00	99	70-130	1	25		
Bromomethane	13.0		ug/L	10.00	130	70-130	0.08	25		
Carbon Disulfide	9.4		ug/L	10.00	94	70-130	2	25		
Carbon Tetrachloride	10.4		ug/L	10.00	104	70-130	3	25		
Chlorobenzene	10.0		ug/L	10.00	100	70-130	1	25		
Chloroethane	9.8		ug/L	10.00	98	70-130	3	25		
Chloroform	10.2		ug/L	10.00	102	70-130	1	25		
Chloromethane	10.6		ug/L	10.00	106	70-130	0.7	25		



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1311544

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CL30436 - 5030B										
cis-1,2-Dichloroethene	9.6		ug/L	10.00	96	70-130	2	25		
cis-1,3-Dichloropropene	10.2		ug/L	10.00	102	70-130	4	25		
Dibromochloromethane	9.3		ug/L	10.00	93	70-130	3	25		
Dibromomethane	9.7		ug/L	10.00	97	70-130	3	25		
Dichlorodifluoromethane	8.7		ug/L	10.00	87	70-130	1	25		
Diethyl Ether	9.2		ug/L	10.00	92	70-130	16	25		
Di-isopropyl ether	9.0		ug/L	10.00	90	70-130	0.3	25		
Ethyl tertiary-butyl ether	7.7		ug/L	10.00	77	70-130	3	25		
Ethylbenzene	10.1		ug/L	10.00	101	70-130	3	25		
Hexachlorobutadiene	12.1		ug/L	10.00	121	70-130	11	25		
Hexachloroethane	10.3		ug/L	10.00	103	70-130	2	25		
Isopropylbenzene	9.3		ug/L	10.00	93	70-130	1	25		
Methyl tert-Butyl Ether	8.0		ug/L	10.00	80	70-130	0.5	25		
Methylene Chloride	9.3		ug/L	10.00	93	70-130	3	25		
Naphthalene	9.3		ug/L	10.00	93	70-130	6	25		
n-Butylbenzene	9.8		ug/L	10.00	98	70-130	5	25		
n-Propylbenzene	9.6		ug/L	10.00	96	70-130	1	25		
sec-Butylbenzene	10.1		ug/L	10.00	101	70-130	4	25		
Styrene	9.2		ug/L	10.00	92	70-130	0.3	25		
tert-Butylbenzene	9.7		ug/L	10.00	97	70-130	0.5	25		
Tertiary-amyl methyl ether	6.7		ug/L	10.00	67	70-130	6	25		
Tetrachloroethene	8.7		ug/L	10.00	87	70-130	0.3	25		
Tetrahydrofuran	9.2		ug/L	10.00	92	70-130	6	25		
Toluene	10.4		ug/L	10.00	104	70-130	0	25		
trans-1,2-Dichloroethene	9.7		ug/L	10.00	97	70-130	1	25		
trans-1,3-Dichloropropene	8.7		ug/L	10.00	87	70-130	0.7	25		
Trichloroethene	9.7		ug/L	10.00	97	70-130	0.1	25		
Trichlorofluoromethane	9.6		ug/L	10.00	96	70-130	2	25		
Vinyl Chloride	10.9		ug/L	10.00	109	70-130	3	25		
Xylene O	10.9		ug/L	10.00	109	70-130	5	25		
Xylene P,M	21.3		ug/L	20.00	106	70-130	3	25		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>24.8</i>		<i>ug/L</i>	<i>25.00</i>	<i>99</i>	<i>70-130</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>25.0</i>		<i>ug/L</i>	<i>25.00</i>	<i>100</i>	<i>70-130</i>				
<i>Surrogate: Dibromofluoromethane</i>	<i>23.9</i>		<i>ug/L</i>	<i>25.00</i>	<i>96</i>	<i>70-130</i>				
<i>Surrogate: Toluene-d8</i>	<i>24.7</i>		<i>ug/L</i>	<i>25.00</i>	<i>99</i>	<i>70-130</i>				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Grant Gear

ESS Laboratory Work Order: 1311544

Notes and Definitions

U	Analyte included in the analysis, but not detected
P	Percent difference between primary and confirmation results exceeds 40% (P).
D+	Relative percent difference for duplicate is outside of criteria (D+).
D	Diluted.
C+	Continuing Calibration recovery is above upper control limit (C+).
B+	Blank Spike recovery is above upper control limit (B+).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Grant Gear

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ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)
A2LA Accredited: Testing Cert# 2864.01
<http://www.a2la.org/scopepdf/2864-01.pdf>

Rhode Island Potable and Non Potable Water: LAI00179
<http://www.health.ri.gov/labs/waterlabs-instate.php>

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI0002
http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-RI002
<http://public.dep.state.ma.us/labcert/labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
<http://www4.egov.nh.gov/des/nhelap/namesearch.asp>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/dep/DEP_OPRA/

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301
http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
<http://www.A2LA.org/dirsearchnew/newsearch.cfm>

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
<http://www.cpsc.gov/cgi-bin/labapplist.aspx>

Sample and Cooler Receipt Checklist

Client: GZA GeoEnvironmental, Inc.

Client Project ID:

Shipped/Delivered Via: ESS CourierESS Project ID: 13110544Date Project Due: 12/4/13 12/6/13 cmt 12/2/13

Days For Project: 5 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?

Air No.:

2. Were Custody Seals Present?

3. Were Custody Seals Intact?

4. Is Radiation count < 100 CPM?

5. Is a cooler present?

Cooler Temp: 3.3**Iced With: Ice**

6. Was COC included with samples?

7. Was COC signed and dated by client?

8. Does the COC match the sample

9. Is COC complete and correct?

*** No****No****N/A****Yes****Yes**

10. Are the samples properly preserved?

Yes

11. Proper sample containers used?

Yes

12. Any air bubbles in the VOA vials?

No

13. Holding times exceeded?

No

14. Sufficient sample volumes?

Yes

15. Any Subcontracting needed?

No

16. Are ESS labels on correct containers?

Yes|No

17. Were samples received intact?

Yes|No

ESS Sample IDs: _____

Sub Lab: _____

Analysis: _____

TAT: _____

18. Was there need to call project manager to discuss status? If yes, please explain.

1 bottle of Sample 2 (ME-16), half full. CTS 12/4/13

Who was called?: _____

By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	1 L Glass	2	NP
1	Yes	40 ml - VOA	3	HCL
2	Yes	1 L Glass	2	NP
2	Yes	40 ml - VOA	3	HCL
3	Yes	1 L Glass	2	NP
3	Yes	40 ml - VOA	3	HCL
4	Yes	1 L Glass	2	NP
4	Yes	40 ml - VOA	3	HCL
5	Yes	1 L Glass	2	NP
5	Yes	40 ml - VOA	3	HCL
6	Yes	1 L Glass	2	NP
6	Yes	40 ml - VOA	3	HCL
7	Yes	1 L Glass	2	NP
7	Yes	40 ml - VOA	3	HCL
8	Yes	40 ml - VOA	2	HCL

Completed By: LLCReviewed By: LLCDate/Time: 11/27/13 20:38Date/Time: 12/2/13 0935

ESS Laboratory

Division of Thielisch Engineering, Inc.

185 Frances Avenue, Cranston, RI 02910-2211

Tel. (401) 461-7181 Fax (401) 461-4486

www.esslaboratory.com

CHAIN OF CUSTODY

Co. Name	Project #	Project Name (20 Char. or less)	Write Required Analysis										
Contact Person	Address												
City	State	Zip	PO#										
Telephone #	Fax #												
ESS LAB Sample #	Date	Collection Time	COMP	GRAB	Matrix	Sample Identification (20 Char. or less)	Pres. Code	Code	Number of Containers	Type of Containers	8082	RBs	

3	11/26/13	815pm	X	46	TR-# Blank	KC	2	V	X	X		
1	9:11am		X	1	Mw-1A	44NA	5	V/C	X	X		
2	12/15pm		X	1	ME-10	44G1	5	V/C	X	X		
3	1045am		X	1	ME-17	44G1	5	V/C	X	X		
4	1130am		X	1	Mw-5EW-11	44G1	5	V/C	X	X		
5	[220pm]		X	1	B-28	44G1	5	V/C	X	X		
6	1225pm		X	1	Duplicate	44G1	5	V/C	X	X		
7	115pm		X	1	Mw-3AR	44G1	5	V/C	X	X		
				1	1167/3	44G1	5	V/C	X	X		
Container Type: P-Poly G-Glass S-Sterile V-VOA Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters												
Cooler Present	<input checked="" type="checkbox"/> Yes	No	Internal Use Only		Preservation Code 1-NP(2-HCl)-H ₂ SO ₄ , 4- HNO ₃ , 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9-		Sampled by:		Comments: Sampled using low-flow methods w/tl & RTI.		Relinquished by: (Signature) Date/Time Received by: (Signature) Date/Time Relinquished by: (Signature) Date/Time Received by: (Signature) Date/Time	
Seals Intact	<input checked="" type="checkbox"/> Yes	No NA: <input checked="" type="checkbox"/> Pickup	Sampled by: Bill Davis		Comments: Sampled using low-flow methods w/tl & RTI.		Relinquished by: (Signature) Date/Time Received by: (Signature) Date/Time Relinquished by: (Signature) Date/Time Received by: (Signature) Date/Time					
Cooler Temp	3.3	TCE Kt	[] Technicians									
*By circling MA-MCP client acknowledges samples were collected in accordance with MADEP CAM VII A												

APPENDIX D

FIELD NOTES

GZA GEOENVIRONMENTAL INC.
One Edgewater Drive, Norwood, MA
Engineers and Scientists

PROJECT

File Number: 18635

Date:

Number: 18605
5/17/13

WELL INFORMATION

Monitoring Well ID MW-1A

Measuring Point: PVC TOC

Well Construction: PVC Other

Well Locked: Yes
No

Well Diameter:

WELL PURGING INFORMATION

Equipment: 451

Start Time:

Stop Time:

Well Depth: feet

Length of Water Column: feet x 0.4896 (2") = gallons

Depth to Product: _____ feet

Average Flow Rate: _____ gallons/min

Depth to Water: **12.94** feet

Total Volume Purged: gallons

SAMPLING INFORMATION

Equipment:

Time: _____

Analysis	Field Filtered	Preservative	Container	Number of Samples
826038082	✓	HCl	GFL	8

FIELD ANALYSIS DATA

	0.1	3%	3%	10%	10mV	10%	
Purge Volume (gallons)	pH	Temperature (°C)	Specific Conductivity (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
9.15	7.84	5.53	1501	16.21	-127.2	Cloudy	
9.16	7.20	5.48	1472	7.66	-109.3	Clear	
9.21	7.31	5.33	1457	2.31	-104.0	Clear	
9.24	7.68	5.29	1427	1.74	-107.5		
9.27	7.97	5.18	1423	1.46	-99.0		
9.30	8.13	5.22	1401	1.24	-90.0		
9.33	7.98	5.26	1326	1.11	-87.1		
9.36	7.97	5.20	1285	1.07	-84.5		
9.39	9.98	5.19	1276	1.04	-83.3		

NOTES

Duplicate taken @ MW-1A

Sample @ 939_{cm} Mw-1A

@ 945m D-p

~~Rain day~~ Hand to recharge

GZA GEOENVIRONMENTAL INC.
One Edgewater Drive, Norwood, MA
Engineers and Scientists

PROJECT

File Number:
Date:

ber: 15605
5/17/13

WELL INFORMATION

Monitoring Well ID ME-17

Measuring Point: PVC Y
TOC

Well Construction: PVC Other

Well Locked: Yes

No A

Well Diameter:

WELL PURGING INFORMATION

Equipment: 451

Start Time:

Stop Time:

Well Depth: feet

Length of Water Column: feet x 0.4896 (2") = gallons

Depth to Product: _____ feet

Average Flow Rate: gallons/min

Depth to Water: feet

Total Volume Purged: _____ gallons

SAMPLING INFORMATION

Equipment:

Time: _____

Analysis	Field Filtered	Preservative	Container	Number of Samples
8260/8082	N		G/V	5

FIELD ANALYSIS DATA

Purge Volume (gallons)	0.1 pH	3% Temperature (°C)	3% Specific Conductivity (µS/cm)	10% DO (mg/L)	10mV ORP (mV)	10% Turbidity (NTU)	Depth to Water (feet)
1	7.22	4.02	608	5.94	-29.8	iron	
2.5	7.24	4.11	800	1.42	-45.9	clean,	
10	7.37	4.21	595	1.17	-51.9	clear	
1.75 1.0	7.52	4.11	598	1.19	-53.2		↑
1.0	7.55	3.98	617	1.20	-50.9		
1.15	7.58	3.96	638	1.25	-49.0		
1.5	7.59	3.91	660	1.29	-50.1		
1.75	7.60	3.87	690	1.39	-51.6		↓
2.0	7.56	3.85	697	1.43	-50.8		↓

NOTES

Sampled @ 10:25 am

GZA GEOENVIRONMENTAL INC.
One Edgewater Drive, Norwood, MA
Engineers and Scientists

PROJECT

File Number:
Date:

5/17/13

18605

WELL INFORMATION

Monitoring Well ID ME-10

Measuring Point: PVC 8
TOC

Well Construction: PVC Other

Well Locked: Yes
No

Well Diameter:

WELL PURGING INFORMATION

Equipment: Y5T

Start Time:

Stop Time:

Well Depth: feet

Length of Water Column: feet x = gallons

Depth to Product: _____ feet

Average Flow Rate: _____ gallons/min

Depth to Water: feet

Total Volume Purged: gallons

SAMPLING INFORMATION

Equipment:

Time: _____

Analysis	Field Filtered	Preservative	Container	Number of Samples
6260 / 8082				4

FIELD ANALYSIS DATA

	0.1	3%	3%	10%	10mV	10%	
Purge Volume (gallons)	pH	Temperature (°C)	Specific Conductivity (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
1040	7.99	3.99	1120	6.18	-26.1	cloudy	
1043	7.85	4.15	945	4.22	-19.2	clearing	
1046	7.96	4.20	998	3.05	5.4		
1049	8.05	4.23	1012	3.05	4.8		
		Ran dry					

NOTES

Ran dry, allowed to re-charge,

could only fill
one 8082 Amber jar.

Sampled @ 1140am

GZA GEOENVIRONMENTAL INC.
One Edgewater Drive, Norwood, MA
Engineers and Scientists

PROJECT

Crown Gear

File Number: 18605
Date: 5/17/13

WELL INFORMATION

Monitoring Well ID MW-EW-11

Measuring Point: PVC X
TOC

Well Construction: PVC Other

Well Locked: Yes
No

Well Diameter:

WELL PURGING INFORMATION

Equipment: yes

Start Time:

Stop Time:

Well Depth: feet

Length of Water Column: feet x 0.273 (1") = gallons

Depth to Product: feet

Average Flow Rate: gallons/min

Depth to Water: feet

Total Volume Purged: _____ gallons

SAMPLING INFORMATION

Equipment:

Time: _____

Analysis	Field Filtered	Preservative	Container	Number of Samples
526 ✓ 808L				5

FIELD ANALYSIS DATA

	0.1	3%	3%	10%	10mV	10%	
Purge Volume (gallons)	pH	Temperature (°C)	Specific Conductivity (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
1105	1	8.29	4.82	494	6.98	-82.0	Clear
1108	1.25	8.13	4.80	486	3.95	-96.9	
1111	1.45	8.07	4.67	483	2.23	-104.0	
1114	1.65	8.14	4.58	479	1.93	-105.5	
1117	1.85	8.11	4.53	480	1.69	-107.1	
1120	1.0	8.04	4.49	479	1.58	-108.0	
1123	1.25	8.00	4.52	477	1.44	-106.8	
1125	1.50	8.01	4.59	476	1.39	-107.2	

NOTES

Sampled on 11/25 am

GZA GEOENVIRONMENTAL INC.
One Edgewater Drive, Norwood, MA
Engineers and Scientists

PROJECT

File Number:

18605

Date: 5/17/13

WELL INFORMATION

Monitoring Well ID B-28

Measuring Point: PVC TOC

Well Construction: PVC

Well Locked Yes No

Well Diameter:

WELL PURGING INFORMATION

Equipment:

Start Time:

Stop Time:

Well Depth: feet

Length of Water Column: feet x 0.4896 (2") = gallons

Depth to Product: _____ feet

Average Flow Rate: gallons/min

Depth to Water: 11.21 feet

Total Volume Purged: gallons

SAMPLING INFORMATION

Equipment: _____

Time: _____

Analysis	Field Filtered	Preservative	Container	Number of Samples
8260 / 8082				5

FIELD ANALYSIS DATA

NOTES

Sampled at ~~2~~ 20pm

GZA GEOENVIRONMENTAL INC.
One Edgewater Drive, Norwood, MA
Engineers and Scientists

PROJECT

File Number: 18695

Date: 5/1/14

5/17/13

WELL INFORMATION

Monitoring Well ID MW-3 AR

Measuring Point: PVC TOC

Well Construction: PVC Other

Well Locked: Yes
No

Well Diameter:

WELL PURGING INFORMATION

Equipment:

Start Time: []

Stop Time:

Well Depth: feet

Length of Water Column: feet x 0.4896 (2") = gallons

Depth to Product: _____ feet

Average Flow Rate: gallons/min

Depth to Water: **9.47** feet

Total Volume Purged: gallons

SAMPLING INFORMATION

Equipment:

Time: _____

Analysis	Field Filtered	Preservative	Container	Number of Samples
8260/8082				

FIELD ANALYSIS DATA

NOTES

Sampled @ 12:45 pm

GZA GEOENVIRONMENTAL INC.
One Edgewater Drive, Norwood, MA
Engineers and Scientists

PROJECT
GRANT GEAR

File Number: 18605
Date: 11/26/13

WELL INFORMATION

Monitoring Well ID MW-1A

Measuring Point: PVC Well Construction: PVC
TOC Other Well Locked: Yes
No

Well Diameter:

WELL PURGING INFORMATION

Equipment:	<input type="text" value="water level"/>	Start Time:	<input type="text"/>	Stop Time:	<input type="text"/>	
Well Depth:	<input type="text"/> feet	Length of Water Column:	<input type="text"/> feet	x	<input type="checkbox"/> 0.275 (1.5") <input type="checkbox"/> 0.4896 (2") <input type="checkbox"/> Other	= <input type="text"/> gallons 3 x Standing Volume
Depth to Product:	<input type="text"/> feet	Average Flow Rate:	<input type="text"/> gallons/min			
Depth to Water:	<input type="text" value="13.88"/> feet	Total Volume Purged:	<input type="text"/> gallons			

SAMPLING INFORMATION

Equipment: 1ST Time: _____

Analysis	Field Filtered	Preservative	Container	Number of Samples
8260 f082	N	HCL	G/V	5

FIELD ANALYSIS DATA

Purge Volume (gallons)	pH	Temperature (°C)	Specific Conductivity (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
	0.1	3%	3%	10%	10mV	10%	
845	6.1	16.09	729	9.74	-8.7	(10mV)	
848	6.28	15.92	728	7.48	-8.8		
851	6.09	15.94	727	2.67	-12.5		
854	6.08	16.07	723	6.66	-3.0		
857	6.01	16.17	720	1.32	-9.7		
700	6.00	16.31	719	1.14	-6.1		
913	6.01	16.32	720	0.99	-3.4		
906	6.02	16.36	719	0.92	-0.1		
919	6.00	16.39	719	0.85	-1.1	↓	

NOTES

Scraped @ 9:11 am

Sampled @ 1215pm

Ran dry & allowed to re-charge

GZA GEOENVIRONMENTAL INC.
One Edgewater Drive, Norwood, MA
Engineers and Scientists

PROJECT
GRANT GEAR

File Number: 18605
Date: 11/26/13

WELL INFORMATION

Monitoring Well ID ME-17(R4)

Measuring Point: PVC
TOC

Well Construction: PVC Other

Well Locked: Yes
No

Well Diameter:

WELL PURGING INFORMATION

Equipment: water level

Start Time:

Stop Time:

Well Depth: feet

Length of Water Column: feet x = gallons

Depth to Product: _____ feet

Average Flow Rate: gallons/min

Depth to Water: 12.72 feet

Total Volume Purged: _____ gallons

SAMPLING INFORMATION

Equipment: Y5T

Time: _____

Analysis	Field Filtered	Preservative	Container	Number of Samples
8260 / 8082	N	MA / itcl	VFG	5

FIELD ANALYSIS DATA

NOTES

Sampled @ 1945 am

GZA GEOENVIRONMENTAL INC.
One Edgewater Drive, Norwood, MA
Engineers and Scientists

PROJECT
GRANT GEAR

File Number: 18645
Date: 11/26/13

WELL INFORMATION

Monitoring Well ID MW-EW-11

Measuring Point: PVC Well Construction: PVC Well Locked: Yes
TOC Other No
Well Diameter:

WELL PURGING INFORMATION

Equipment: <u>Water level</u>	Start Time: <input type="text"/>	Stop Time: <input type="text"/>
Well Depth: <input type="text"/> feet	Length of Water Column: <input type="text"/> feet	<input checked="" type="checkbox"/> 0.275 (1.5") <input type="checkbox"/> 0.4896 (2") <input type="checkbox"/> Other = <input type="text"/> gallons
Depth to Product: <input type="text"/> feet	Average Flow Rate: <input type="text"/> gallons/min	
Depth to Water: <input checked="" type="text"/> feet	Total Volume Purged: <input type="text"/> gallons	

SAMPLING INFORMATION

Equipment: PSI Time: _____

Analysis	Field Filtered	Preservative	Container	Number of Samples
8260/8082	N	HCL/N/A	V/G	5

FIELD ANALYSIS DATA

Purge Volume (gallons)	0.1 pH	3% Temperature (°C)	3% Specific Conductivity (µS/cm)	10% DO (mg/L)	10mV ORP (mV)	10% Turbidity (NTU)	Depth to Water (feet)
1	7.07	15.10	378	3.17	-1.6	clear	
1.25	7.08	15.20	380	2.46	14.3		
1.50	7.10	15.22	381	1.81	18.4		
1.75	7.06	14.97	379	3.38	30.1		
1.0	7.04	14.92	379	4.41	36.2		
1.25	7.01	14.94	380	5.12	39.5		
1.50	6.98	14.96	380	5.52	40.6		
1.75	6.97	14.94	381	5.73	41.3		

NOTES

Scanned @ 1130am

GZA GEOENVIRONMENTAL INC.
One Edgewater Drive, Norwood, MA
Engineers and Scientists

PROJECT
GRANT GEAR

File Number: 18645
Date: 11/26/13

WELL INFORMATION

Monitoring Well ID

B-28

Measuring Point:

PVC

Well Construction: PVC

Well Locked:

Yao

TOC

Other []

No. 15

Well Diameter: []

WELL PURGING INFORMATION

Equipment: Water level

Start Time:

Stop Time:

Well Depth: feet

$$\text{Length of Water Column: } \boxed{} \text{ feet} \times \begin{array}{l} \underline{0.275 \text{ (1.5')}} \\ \underline{0.4896 \text{ (2')}} \\ \text{Other: } \underline{} \end{array} = \boxed{} \text{ gallons}$$

Depth to Product: feet

Average Flow Rate: gallons/min

Depth to Water: feet

Total Volume Purged: _____ gallons

SAMPLING INFORMATION

Equipment:

Time: _____

Analysis	Field Filtered	Preservative	Container	Number of Samples
8260/808L	✓	HCl / nit.	V/G	

FIELD ANALYSIS DATA

	0.1	3%	3%	10%	10mV	10%	
Purge Volume (gallons)	pH	Temperature (°C)	Specific Conductivity (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
1158	1.1	6.66	15.73	940	9.25	178.3	clear
1201	1.25	6.67	16.64	999	6.23	121.7	clear
1204	1.50	6.66	16.69	1007	5.71	123.4	
1207	1.75	6.56	16.81	1007	5.23	127.1	
1210	1.0	6.54	16.93	1012	5.12	127.9	
1213	1.25	6.53	17.08	1019	5.10	133.4	
1216	1.50	6.52	17.10	1022	5.08	135.2	
1219	1.75	6.49	17.12	1025	5.13	136.4	

NOTES

Sampled @ 1220 μ m

Duplicate collected
at this location @ 1225 μm

GZA GEOENVIRONMENTAL INC.
One Edgewater Drive, Norwood, MA
Engineers and Scientists

PROJECT
GRANT GEAR

File Number: 18605
Date: 11/26/13

WELL INFORMATION

Monitoring Well ID MW-34R

Measuring Point: PVC Well Construction: PVC Well Locked: Yes
TOC Other No
Well Diameter:

Well Diameter:

WELL PURGING INFORMATION

Equipment: Water Level Start Time: _____ Stop Time: _____
 Well Depth: _____ feet Length of Water Column: _____ feet x
 0.275 (1.5") 0.4896 (2") Other = _____ gallons
 Depth to Product: _____ feet Average Flow Rate: _____ gallons/min
 Depth to Water: 10.05 feet Total Volume Purged: _____ gallons

SAMPLING INFORMATION

Equipment: YST Time: _____

Analysis	Field Filtered	Preservative	Container	Number of Samples
8260/8052	N	HCl/NA	V/G	5

FIELD ANALYSIS DATA

NOTES

Sampled @ 115 pm